The Newspaper of Information Systems Management
April 1, 1996, Vol. 30, No. 14, 132 Pages, $6/Copy, $48/Year

COMPUTERWORLD

Feds to IRS: Fix project or shut it down

By Gary H. Anthes
WASHINGTON

Taxpayers struggling to file their returns on time can take some comfort in knowing that this year the Internal Revenue Service faces a taxing deadline of its own.

Indeed, time appears to be running out for the IRS' beleaguered Tax Systems Modernization program. Congress recently told the agency it has just two months to prove that the 10-year-old computer project is on the right track or it will pull the plug.

Last week, the IRS was again taken to the woodshed and, like the perennially naughty boy who promises to be good after every scolding, emerged vowing that this time things would be different.

"The story remains the same — 'Give us another billion dollars, and we promise that this time

IRS, *page 28*

ATM alternatives

Cisco, Cabletron prep cheaper, user-friendly switching options

Networld/Interop '96

- Sellar launches global intranet service. See page 10.
- Microsoft strips Exchange. See page 14.
- IBM to detail system management plans. See page 15.

By Laura DiDio and Bob Wallace

Internetworking

ATM is supposed to take center stage at this week's Networld/Interop show but could find itself elbowed out of the spotlight. Internetworking giants Cisco Systems, Inc. and Cabletron Systems, Inc. are prepping two alternatives they claim will deliver the benefits and services of ATM without the migration woes.

This two-pronged assault could delay, or even kill, some migration to Asynchronous Transfer Mode technology, some users and analysts agreed.

ATM is a switching technology designed to transmit voice, video and data across digital networks at speeds ranging from 25M bit/sec. to more than 622M bit/sec. But user acceptance has been stymied by high costs, an incomplete standard and a steep learning curve. Hence, years after its conception, ATM is still not mainstream.

For example, Dave Eisenlohr, vice president of computer operations at the Pacific Stock Exchange in San Francisco, said he has put off ATM migration for at least a year, in part because "we don't have enough resources in-house to deploy it now." He said ATM costs include training, staff development and difficulties in start-up, which

ATM alternatives, *page 14*

Cabletron one-ups Bay with switching

By Bob Wallace

To switching-starved Bay Networks users, it's a gift basket.

To hub maker Bay, it's a Trojan horse with dangerous cargo.

"It" is a plug-in switching product due in 90 days from rival Cabletron Systems, Inc. In an unusual move, Cabletron aims to give Bay users sorely needed and long-awaited instant switching for Bay Networks, Inc.'s widely used flagship System 5000 hubs, said Trent Waterhouse, switching marketing manager at Cabletron.

Code-named Bay-B-Huey, the product was designed to capitalize on Bay's inability to deliver a wide range of competitively priced switching modules — which were due in late 1993 — for the System 5000.

Bay-B-Huey will fill those gaps, covering the gamut of options via the Cabletron family of switching products. Bay shipped Ethernet switching last week, but at a price per port that is 50% higher than Bay-B-Huey's.

And Bay won't ship Fiber Distributed Data Interface switching until the fourth quarter; Token Ring delivery is slated for even

Cabletron, *page 16*

Boston Beer brews quick hop to R/3

By Julia King

Scrap re-engineering. Forget training. And take no more than 24 hours to decide on a configuration.

That's how $150 million Boston Beer Co. — a half-pint compared with most SAP AG R/3 users — managed to implement a full suite of the notoriously complex client/server software in just four months.

Total cost: less than $1 million — a minuscule and almost unheard-of amount — for software and

Boston Beer, *page 121*

Teleworkers leap Olympic hurdles

Telecommuting consultant Michael Dziak

By Mindy Blodgett

The law offices of Paul, Hastings, Janofsky & Walker in Atlanta are located right in the heart of the Olympic ring, where streets will close and as many as 2 million visitors will overrun the city for 17 days in July.

"I can see 80% of the Olympic venues from my window," said attorney John Steed.

During the Games, up to one-third of the firm's 150 employees will telecommute. The rest, who are needed in the office, will work in split shifts.

The short-term emergency created by the Olympic-size congestion has telecommuting gurus salivating. Many companies are feverishly adding phone lines and modems and buying notebook computers to accommodate the predicted increase of thousands more teleworkers.

Paul, Hastings' offices have no choice but to join what some are calling the biggest

Olympics, *page 121*

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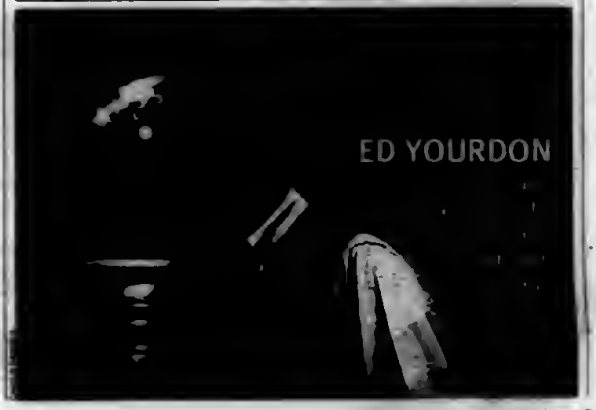

A PUBLICATION OF IDG

Inside Computerworld

April 1, 1996

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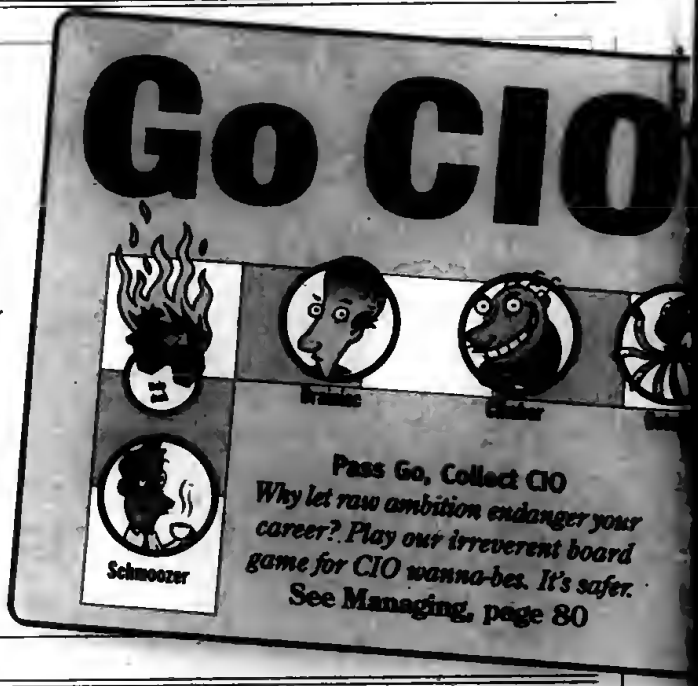
Call it reverse-recruiting.
Faced with imminent downsizing, IS employees at Simpson Paper Co. are marketing themselves as a group. The goal: lure to their community an employer that seeks an experienced IS department.
See Careers, page 96



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altcw

More PCs are showing up in blue-collar environments, from forklifts and trucks to construction sites and oil rigs. The following rugged devices can take a beating and keep on clicking.

"Rocky" is a rugged Pentium notebook that weighs 6.4 lbs. and costs nearly $4,000. The vendor, Amrel Technology in Arcadia, Calif., claims Rocky can withstand dirt, oil, grime, vibration, transportation shock, high humidity, salt fog, a drenching rain and, most important, a spilled cup of coffee. Your daily sludge can be literally hosed off. Rocky also comes with an active-matrix color screen for visibility outdoors.

The DuraPoint may be the world's toughest computer mouse, claims Interlink Electronics in Camarillo, Calif. The DuraPoint costs $279. It works even when submerged in water and recently survived a five-story drop during testing in Sweden. "It not only survived [the fall], but emerged intact after being run over by an 18-wheel semi-truck," a spokesman says. The DuraPoint is basically a VersaPoint stick encased in industrial-grade rubber and stainless steel.

A wide variety of industries is taking advantage of O'Neil Product Development's MicroFlash, a 2-inch portable printer that can be worn on a user's belt. It costs $995. The printer gets its data by infrared transmission from a mobile computer or personal digital assistant. The rugged unit is being used to print on-the-spot parking tickets, car inspection reports and receipts for Keno players at the Taj Mahal and Caesar's Palace casinos in Atlantic City, N.J.

Unusual troubles

Remember the ill-fated baggage-handling system that delayed the opening of the Denver International Airport a year ago? The Denver airport jinx continues, according to recent press reports:

United Airlines is suing BAE Automated Systems, charging that BAE's baggage system in Denver is so unreliable it's creating "an operational and customer-relations disaster." BAE is countersuing to get its $17.5 million second-installment payment.

Managers at the $5 billion Denver airport forgot to install an intercom system for the internal subway. So when a computer that controls the subway broke down, there was no way to communicate with the trapped passengers. The city fixed the problem by purchasing six bullhorns.

A computer executive was stunned to find that his PC, which was in a steel-and-wood container, was smashed after a flight to Denver. A baggage handler mistakenly put the container wheels-down on the conveyor belt, and the container careened down an incline and was run over by a moving baggage cart.

During a blizzard last October, the airport tower's plastic roof leaked water and snow on computer equipment.

■ **Send contributions of offbeat news, lists and anecdotes to mbetts@cw.com.**

Fashion designers in Paris are fuming about counterfeiters who use the 'net to peek at new styles and then stitch up quickie knockoffs, the *Associated Press* reports. High-quality images of the designs appear on Web-zines, such as http://www.firstview.com, just after they've hit the runways.

Digital Frontiers

A wide range of privacy experts and corporations have joined forces in the Global Business Privacy Project to tackle two of the most vexing issues for information managers.

The group, founded by privacy expert Alan F. Westin, will try to figure out how multinational corporations can deal with consumer privacy on the Internet and in the European Union's Data Protection Directive. The European privacy directive, which will take effect in mid-1998, is more restrictive than U.S. practices (CW, July 31).

The steering committee includes representatives from big-name companies such as Citicorp, American Express, Equifax, America Online, MCI and the Dallas-based International Association for Human Resource Information Management.

The group plans to meet Oct. 9 and 10, develop recommendations in December and, by early next year, have a set of "business strategy materials" to disseminate.

The fabric of the Web

Competition between Microsoft and Netscape is fierce but not just with Web servers. The feud extends to company paraphernalia, from mugs to polar fleece.

	Microsoft	Netscape
Polar fleece pullover	$55	$54.90
Leather-flap portfolio	$17	$15
Boxer shorts	$11.95	$12
Key chain	$7	$6.90
Button-down denim shirt	$39	$42.90
Pen-and-pencil set	$13 to $37	$46.90
Baseball hat	$9	$9 to $14.95
Coffee mug	$4.50 to $15	$12

Source: Merchandise on sale at Internet conferences, March 1996

News shorts

Microsoft does about-face

After ridiculing the idea of inexpensive, low-end computing devices for home use, **Microsoft Corp.** is trying to claim the idea as its own.

Microsoft today plans to announce a set of hardware, software and communications specifications called Simply Interactive PC, or SIPC, which hardware vendors would use to build such devices, said Richard Shaffer, president of **Technologic Partners**, a consulting and publishing firm in New York.

The specification, to be announced at the Windows Hardware Engineering Conference (WinHEC) 96 in San Francisco, will allow various operating systems and environments to interact with and control consumer devices such as VCRs, Shaffer said.

SIPC includes plans for a standard, high-speed cable connection between low-end PCs and other consumer gear, he said. Microsoft has already approached major hardware vendors about building the SIPC devices.

Oracle and user group to go separate ways

Oracle Corp. and its international user group have agreed to disagree.

Oracle and the **International Oracle Users Group-Americas (IOUG-A)** won't boycott each other's meetings or hold them at the same time, and Oracle won't sue to enjoin IOUG-A's use of the phrases "International Oracle Users Week" and "IOUW," spokesmen said. The boycott, lawsuit and simultaneous scheduling were threatened in January when a rift developed over the focus and control of IOUW (CW, Jan. 22).

Oracle will inaugurate Open World, a user conference and exposition, Nov. 3-8 at the Moscone Center in San Francisco. IOUG-A will hold a separate event, IOUW, sometime in the spring of 1997.

HP jumps into CORBA

Hewlett-Packard Co. this week is introducing a C++-compatible product based on Version 2.0 of the Common Object Request Broker Architecture (CORBA) specification.

An object request broker handles communications between objects on a network. HP in 1993 announced plans to develop a product based on the first implementation of CORBA but dropped that project to wait for the multivendor interoperability built in to CORBA 2.0.

Also being introduced is DE/ServiceMonitor, a tool that monitors the status of security, directory and time services in Distributed Computing Environment (DCE) networks.

For more **News shorts**, *see page 8*

Oracle7 Parallel Server: Still Unparalleled.

Key Features	Oracle7	Sybase ~~System 10~~ SQL Server 11
Processing Strate	✓	✓
Processing Slides	✓	✓
erant Parallel Se (Clusters)	✓	☐
uery Software	✓	☐
lex Software	✓	☐
ecovery Softw	✓	☐
Supported w eatures	20+	None

Sybase may have changed the name of their database, but they didn't change its "parallel nothing" architecture. Oracle7's parallel everything database architecture makes open system computers faster and more reliable than mainframes. Call Oracle for the software, 1-800-633-1071, ext. 8110. Call Sybase for the slideshow, but please, call one at a time.

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Sun lights 64-bit server

UltraEnterprise boxes offer more power at same price

By Craig Stedman

Sun Microsystems, Inc. will try to blow away customers with faster performance when it introduces a line of 64-bit Unix servers in two weeks.

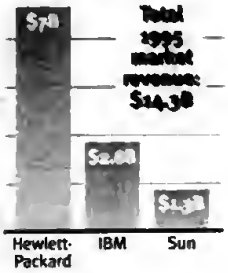
Even better, customers briefed by Sun said they were told they will get the extra performance at the same prices they pay now. Meanwhile, the maximum number of processors is rising from 20 to 30.

The new machines also add key redundancy and availability features designed to make commercial shops feel warmer about Sun's enterprise capabilities.

Sun has long faced doubts about its ability to compete on equal footing with Hewlett-Packard Co. and IBM in the corporate server market.

RISC takers

Top 3 worldwide commercial multiuser RISC/Unix vendors by revenue



Source: Aberdeen Group, Inc., Boston

Back in the race

Sources familiar with Sun's plans said the six UltraEnterprise systems, which are slated to be unveiled April 16, should pull the vendor out of the throughput cellar and break new ground on built-in availability.

According to user sources, Sun promises that the new servers will be two to three times faster than its existing hardware because of the 64-bit UltraSPARC chip and a new bus architecture.

"This is one of those quantum leap architecture jumps for Sun," said Cliff Triplett, director of information systems at AlliedSignal Engine in Phoenix. "Up until UltraSPARC, HP had the faster box. This gets Sun back to a parity that lets them compete on something other than price."

The servers will include redundant power supplies and fans, the ability to replace boards and modules while the system is running and support for shutting down some processors while continuing to operate with others.

Those built-in capabilities resonated with several customers.

"I see Sun moving high availability to be more of a core product and differentiator. I don't hear that from HP as much," Triplett said. AlliedSignal Engine runs its Unix applications on HP servers, and Sun machines handle file serving. But the UltraSPARC-based systems should make Sun more competitive on the application side, he said.

Brian Slater, managing director at The Chase Manhattan Bank Corp.'s Global Banking division in New York, said he has had to rely on "very inelegant" approaches to ensure that processing continues if a Sun server goes down.

"As server technology has wormed its way more and more into the enterprise, people will no longer accept failures," Slater said. The features promised by Sun "are certainly in the right frame," he added. "The nearer you can get to having a hot standby, the better it is."

Some difficulties

Sun's new servers present two potential drawbacks: Users have to do a box swap to upgrade to an UltraEnterprise model. They also must migrate to the latest version of Sun's Solaris operating system

"It's not as straightforward a change as Sun would make it out to be," said George Weiss, an analyst at Gartner Group, Inc. in Stamford, Conn. But upgrades within the new line will be much easier, he added.

HP, the leading commercial Unix server vendor (see chart), also won't suffer Sun's rollout in silence for long. Sources said HP is expected to incorporate its 64-bit PA-8000 chip into servers starting this summer. Existing HP systems will be able to handle board upgrades to the 64-bit level.

'net disruptions targeted by IBM recovery services

By Kim S. Nash

IBM last week unveiled two services intended to help IS managers fight acts of man and nature that threaten to disrupt Internet and intranet applications.

The services, which are available via monthly or yearly subscriptions, can protect information systems from natural disasters and events such as security intrusions and network failures.

Industry observers praised IBM's plans and said disaster recovery for Internet sites is crucial, yet few users have done much about it.

Emergency planning for Internet and intranet systems "is an entirely new facet to think about, and we're talking about only a handful of companies that have actually contemplated it," said Winn Schwartau, president of Interpact, Inc., a security consulting firm in Seminole, Fla.

According to a recent survey from O'Reilly & Associates, Inc. in Sebastopol, Calif., 60% of large and midsize companies already run at least one intranet and 76% have World Wide Web or Internet access.

"People have got to think of the Web just like they do any critical application," said Bruce Rosen, senior technical consultant at Cambridge Technology Partners, Inc. in Cambridge, Mass.

"If you don't do a good job with recovery procedures, you're almost guaranteed to get burned," Rosen said.

IBM's Internet Recovery Services give users access to IBM's proprietary global network if downed pieces of the public Internet block traffic to and from customers' Web sites.

Users also can opt for backup hardware and software to be set up at IBM's Sterling Forest, N.Y., center to handle processing if Web servers crash.

IBM's Emergency Response Service helps guard against security attacks. Users get a detailed audit of existing security measures and advice on how to plug holes. Users receive a newsletter that advises them about threats to their systems. They also get 24-hour, 7-day-per-week access to 15 security experts at IBM in the event of trouble.

Separately, Internet service provider Icon CMT Corp. said it will offer the IBM protection to its customers. Icon users would pay the New York networker an unspecified monthly fee for IBM's services.

But some users don't want to give outsiders intimate knowledge of their internal systems. The Chase Manhattan Bank Corp., for example, plans to launch today's Web site of several hundred pages. But contingency plans will be carried out at the bank.

"We want to make sure that we always know what's happening with our [Web] services," said Lisun Joao, second vice president of corporate technology at Chase in New York.

The bank has mirrored its Unix-based Web server hardware, software and databases so backup gear will kick in automatically if the primary server crashes.

Chase also has set up two points of presence with its Internet service provider to handle a network failure beyond the bank's boundaries. If one Internet path fails, queries and data will be rerouted to another avenue.

Master of disaster

DISASTER RECOVERY SERVICES

- $300 to $700 per month for emergency access to IBM's global network
- $200 to several thousand dollars per month for mirrored Web server hardware, software and databases

SECURITY AUDIT AND EMERGENCY RESPONSE SERVICE

- $75,000 per year per Internet or intranet connection
- $15,000 per year per additional site

A key security tool hits intranets. See page 66.

Information Builders extends its 'data plumbing'

By Frank Hayes

Information Builders, Inc. in New York announced last week that it will extend its popular middleware to give end users much more flexible access to enterprise data.

Enterprise Data Access, which is widely known as EDA/SQL, serves as a "data plumbing" system that transparently connects applications with data sources on mainframes and servers.

Middleware

The new release, dubbed EDA 4, also lets users request information and then collect the answer later, rather than waiting for the database to respond.

With this capability, called asynchronous messaging and queuing, users can launch complex and time-consuming database queries and then check in later for the result — a particular advantage for remote laptop users.

EDA 4 supports guaranteed delivery of messages, which are stored in a buffer until they can be processed or retrieved.

The new built-in capabilities will allow EDA 4 to connect with enterprise application packages from SAP AG, PeopleSoft, Inc. and Baan Co. that in the past required a separate middleware infrastructure.

The new version will also be able to interoperate with other messaging middleware, such as IBM's MQSeries and Microsoft Corp.'s Exchange.

"It's a step forward, especially with the ability to interoperate with Microsoft and other messaging systems," said Peggy Ledvina, vice president of application delivery strategies at Meta Group, Inc.'s Reston, Va., office. "And with the embedded queue manager, there's an advantage over using separate synchronous and asynchronous message systems."

Q3 shipping

The new release, which runs on Windows NT, Unix boxes and IBM mainframes, will begin shipping in the third quarter. Prices for each module start at about $5,000.

Other separately priced modules for EDA 4 will support gateways to World Wide Web sites, access to repositories from other vendors and links to third-party systems management tools.

IBM frames public SNA traffic plan

By Bob Wallace

IBM is finally taking SNA-over-frame-relay seriously.

The company endorsed the idea of moving SNA traffic from private lines to public frame-relay networks last week when it announced plans to sell the needed user equipment and signed a deal with frame-relay switch power Cascade Communications Corp.

Sending data over a public frame-relay network can save users 30% to 40% on wide-area networking charges.

Mass appeal

"I'm sure more users will move to frame for carrying SNA traffic because there's still a fairly pervasive mentality where users do whatever IBM says is right," said Dan Althof, senior network planner at First Bank System in St. Paul, Minn. The bank runs SNA over a frame-relay network with more than 400 sites.

"This will help bring SNA-over-frame solutions to the mass market," added Beth Gage, a broadband consultant at TeleChoice, Inc. in Verona, N.J. "IBM has frame-relay access features on existing products, but the products are inflexible and incredibly expensive."

That's where frame-relay access device (FRAD) market leader Sync Research comes in. IBM will resell Sync's Frame-Node FRADs, renamed as 2218 Nways.

Long-distance and local carriers have been selling the fast-packet, frame-relay service to mainframe SNA shops for years, but IBM is just now moving aggressively into this market.

Users who already run SNA over frame-relay networks say the IBM/Sync deal will make that scheme attractive to a broader audience. For example, Althof said the bank went with Sync's FRADs because IBM's didn't support bisync, a protocol used by most automated teller machines.

Gage added, "This relationship combines IBM's long-proven expertise in SNA networking with Sync's main strength of providing devices access to IBM hosts over frame-relay networks."

IBM also announced it will immediately resell the popular and low-cost Cascade carrier switches as part of its WAN product line worldwide. The duo also formed a joint development organization that will augment the switches with a wider variety of interfaces to make them more useful for user networks.

Ex-IBM group sues IRS

By Craig Stedman

A group of almost 750 former IBM employees last week sued the Internal Revenue Service for taxing the severance payments they received when they were let go by the computer giant. The suit could also have implications for workers downsized out of their jobs at other companies.

The suit contends that IBM employees who were laid off or took voluntary buyouts from 1991 to 1994 shouldn't have had to pay taxes on their severance packages. The workers had to sign promises not to sue IBM, which turned the payments into settlements rather than taxable wages, the suit claims.

IRS policy

The IRS declined to comment, other than to say that its standard practice is to deny claims for refunds of taxes on severance payments. IBM also wouldn't comment beyond confirming that workers who took buyouts are required to sign a statement disavowing future suits against the firm.

Neil Kimmelfield, a partner at the Portland, Ore., law firm that filed the suit, said he has been contacted by workers in similar straights from more than 50 other companies.

FDR UPSTREAM

"FDR/Upstream is the **highest rated** mainframe-based package, coming first (of the mainframe-based packages) for six of the eight criteria in the survey, including **first for overall satisfaction.** Mainframe-based packages were, as a group, rated more favourably than server-based packages for all eight criteria, and they also appear to account for much of the growth in this sector of the market (last year roughly one in ten packages were running on the mainframe, compared with roughly one in three this year)."

Xephon, December 1995

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Microsoft aims NT at multiprocessing

By Bob Francis

Microsoft Corp. this week will demonstrate new scalability features aimed at positioning Windows NT Server as a match for Unix on multiprocessing servers.

With the new features, which will appear on Windows NT 4.0 later this year, Microsoft is targeting the operating system at high-end department and low-end enterprise applications, said analysts and industry officials familiar with Microsoft's plans.

What's on tap

The features include decision support, point-of-scale and data warehousing functions, which currently are the province of Unix.

According to sources who have worked with Microsoft on the features, the company has made a variety of improvements, such as caching, to help NT handle higher levels of multiprocessing.

Currently, Windows NT scales fairly well to four-processor systems, but performance declines rapidly beyond that.

This week Microsoft will demonstrate eight-way multiprocessing at the Windows Hardware Engineering Conference in San Jose, Calif., said George White, president of Corollary, Inc. in Irvine, Calif., which has worked with Microsoft on scalability improvements.

While Microsoft made some of the improvements in the Windows NT 3.51 release, it will make additional improvements in the 4.0 release, which is slated for the second half of this year.

"We'd like to see even more scalability on these systems because we're pushing into NT pretty hard," said an IS manager at a New York financial institution.

Corporate cluster

Microsoft's other strategy to get into the corporate data center is clustering, said Dwight Davis, editor of "WindowsWatcher," a newsletter in Redmond, Wash.

Microsoft has agreements with Digital Equipment Corp., NCR Corp., Tandem Computers, Inc. and Compaq Computer Corp. to provide some clustering application programming interfaces for systems later this year. Most of those offerings will be simple failover, two-node clusters, said sources briefed on Microsoft's plans.

Which way?

Microsoft plans several enhancements to Windows NT Server to increase its scalability to eight-way multiprocessing

Usage for current four-way multiprocessing

- Small application servers

Future eight-way multiprocessing

- Decision support
- Point of sale

In the driver's seat

Microsoft plans to unveil a new driver architecture at its Windows Hardware Engineering Conference this week.

The Win32 Driver Model is aimed at bridging the gap between Windows 95 and Windows NT applications, said Bill Veghte, group manager at Microsoft's business systems division.

"For developers, that means they won't have to use different drivers for our Windows 95 and Windows NT applications, and it will mean both operating systems will be using faster 32-bit drivers," he said.

The new driver architecture was designed for increased multimedia performance for Windows 95 and NT.

Microsoft also plans a new On Power Management architecture, which will let users keep their PCs powered on at all times, Veghte said.

In addition, sources said IBM, which in the past has been on the periphery of the conference, will play a major role as it tries to show off its ability to deliver NT applications to its customers.

— Bob Francis

News Shorts

CompuServe to go public; hopes to raise $480M

Amid speculation as to whether the Internet will make private on-line services obsolete, a confident **CompuServe, Inc.** is going public. Last week, parent company H&R Block, Inc. said it wants to raise as much as $480 million in an initial public offering of 15 million shares, or 17.7% of its CompuServe subsidiary. At a price of $27 to $30 per share, the company would be valued at $2.44 billion to $2.71 billion, based on an expected 90.2 million outstanding shares. By comparison, rival America Online, Inc., with a slightly larger number of subscribers, is valued at $5.68 billion.

Intranet apps from NetManage

NetManage, Inc. in Cupertino, Calif., plans to ship an intranet application suite today for Windows NT. The core of the IntraNet Server package is the Forum Server, software that lets users conduct threaded discussion using the Net News Transport Protocol. Forum Server allows miniature Usenet newsgroups to gather on intranets. The suite will cost less than $1,000, but it is discounted at $495 through June.

Microsoft updates WinSock doc

Microsoft Corp. last week said it would update developer documentation to differentiate between its proprietary and standard WinSock extensions. Inadequate documentation has led some software developers, including Microsoft itself, to unknowingly create nonstandard WinSock applications that don't interoperate with TCP/IP stacks produced by vendors other than Microsoft. Microsoft and Stardust Technologies, Inc., an interoperability testing lab, have called a meeting at Networld/Interop '96 to discuss the issue, which has led software developers to create faulty WinSock applications.

IBM takes slow route

Playing catch-up, **IBM** announced High Performance Routing (HPR) for several of its internetworking products. HPR lets devices map end-to-end paths across networks before data is sent, provides congestion control and routes data around downed wide-area network links. HPR will be available for the IBM 2217 Nways Multiprotocol Concentrator on April 26 for $3,695. 3Com Corp., Bay Networks, Inc. and Cisco Systems, Inc. announced HPR support several weeks ago.

Barrett leaves Banc One

Robert L. Barrett, chief technology officer at **Banc One Corp.** in Columbus, Ohio, was named to the newly created position of president of the Network Systems and Services unit of Frontier Corp., a telecommunications company in Rochester, N.Y. Barrett's previous duties will be split up across Banc One's information services unit.

'Monster Netra' to surface

Sun Microsystems, Inc. will introduce a multiprocessor version of its Netra Internet server. The so-called "monster Netra" is based on Sun's 64-bit UltraSPARC chip, which also is being used in new uniprocessor Netras that were announced last week with a variety of Internet/intranet software.

Verity throws search party

On-line search engine maker **Verity, Inc.** plans to announce a search product tomorrow that lets users scour the World Wide Web and Microsoft Corp. Exchange documents at the same time. By contrast, the search facility that will accompany Exchange when it ships this week can peruse only Exchange-related information. Verity's TopicSearch for Microsoft Exchange is priced at $395 per server and $49.95 per client.

BellSouth teams with Iona

BellSouth Corp. said it is working with **Iona Technologies Ltd.** in Dublin, Ireland, to implement Iona's object-oriented middleware on IBM mainframes. The project will initially port Iona's Orbix object middleware to IBM's MVS OpenEdition mainframe operating system, with future plans to support earlier releases of MVS and integration with Cobol, CICS and the IMS transaction manager. IBM and Digital Equipment Corp. already offer MVS versions of object middleware.

Lotus upgrades Notes Network

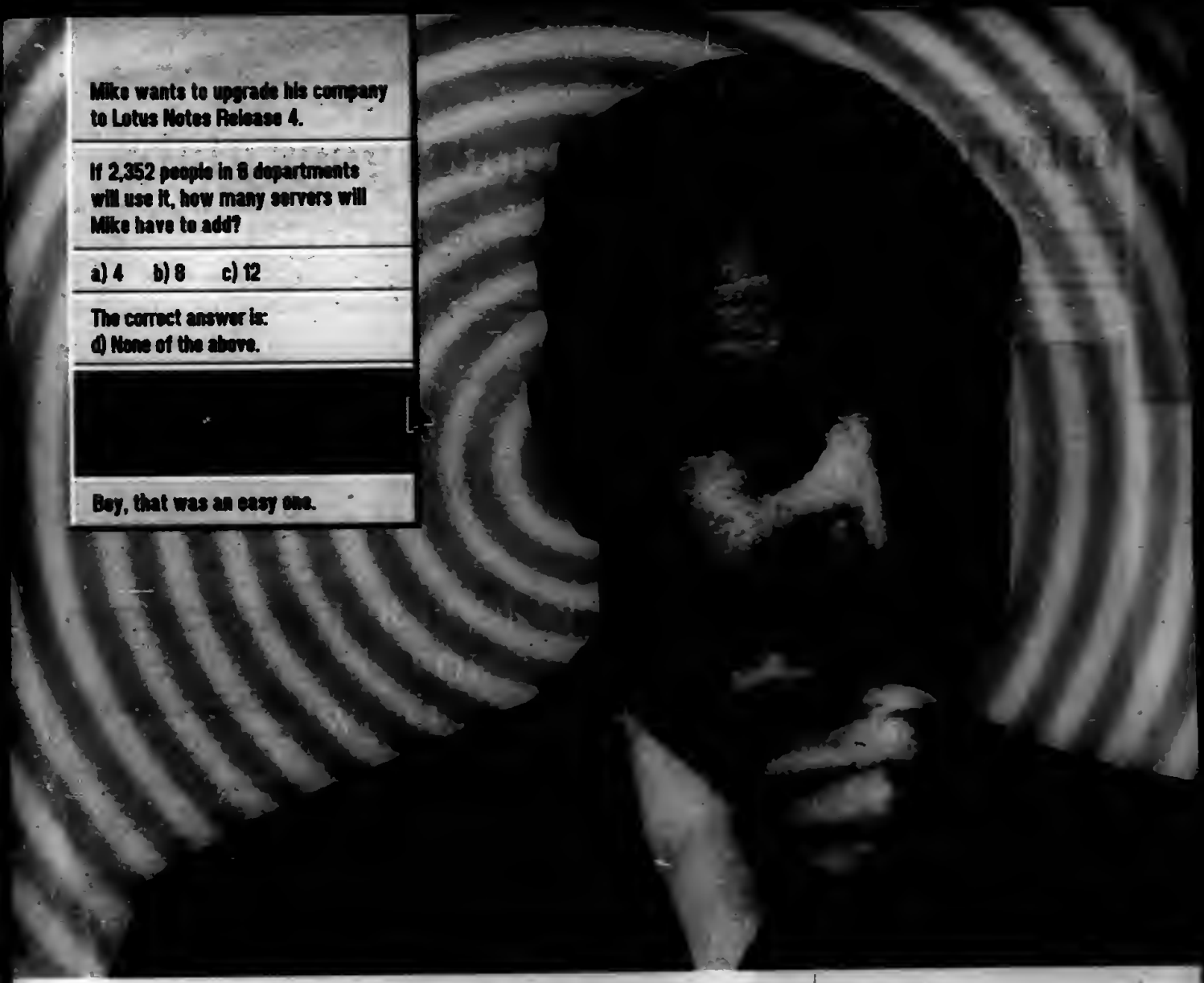
Lotus Development Corp. will announce Release 2.0 of its Lotus Notes Network (LNN) at Networld/Interop '96 in Las Vegas this week. The network is a Notes-based on-line service that replicates Notes technical papers, product information and discussion lists down to subscriber's Notes servers. Release 2.0 will let users access LNN over the Internet, support 28.8K bit/sec. and X.25 service via CompuServe and let client machines directly access LNN servers.

The Quarterdeck connection

Quarterdeck Corp. is on the move. This week, it will introduce software to connect Novell, Inc. NetWare users to the Internet. The company recently acquired **Datastorm Technologies, Inc.**, which makes the popular dial-up modem software Procomm Plus, and said it would acquire **Future Labs, Inc.**, which makes collaborative technology to allow users to share work over the Internet.

EMC boosts disk performance

EMC Corp. tomorrow will announce a performance boost of almost 60% on its Symmetrix 5500 mainframe disk arrays, sources said. The faster speed results from a new microcode release plus better cache memory management and beefed-up connections to mainframe Escon channels. The microcode is free, while hardware upgrades range from $225,000 to $1.3 million. EMC, based in Hopkinton, Mass., surpassed IBM in mainframe disk shipments last year.



[Can your Notes server do this?] While Lotus Notes® Release 4 can be the answer to your collaborative computing prayers, it can also raise some important questions. Like how many servers will you need to handle the added users Notes™ Release 4 supports? Fortunately, there's a rather simple solution: the RS/6000™ Notes Server.

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Internet, intranet support goes global

By Patrick Dryden

Multinational corporations soon will be able to extend their intranets globally and have someone else take responsibility for delivery, security and local support.

Scitor International Telecommunication Services, Inc. in Atlanta this week will launch dial-up access to its TCP/IP network that links 250 cities in 100 countries.

Scitor is offering commercial access to the private network and portfolio of support services of parent company SITA Group.

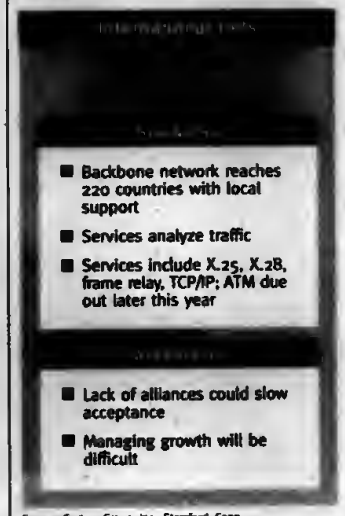
In addition, a partnership with Internet pioneer BBN Corp. in Cambridge, Mass., has opened up Scitor's IP backbone. The partnership also enabled the BBN Planet group to introduce global Internet connectivity service last week.

"Either route offers multinational corporations a truly global, managed IP network for building an intranet," said Caroline Robertson, research manager for business network services at International Data Corp. in Framingham, Mass.

Scitor has complete control over its private network, which should reassure users who fear the public Internet's lack of control over reliability, throughput and security, Robertson said.

"Scitor could provide better management, security and performance than carrier alliances because it owns the backbone from end to end, instead of having to hook up separate networks," said Timothy Burke, communications analyst at The Yankee Group in Boston.

Both Scitor and the joint ventures driven by carriers can provide a single point for global network services. But these Internet services set Scitor apart, Robertson said. And Scitor offers a more substantial international presence, Burke added.



Source: Gartner Group, Inc., Stamford, Conn.

"I'm glad Scitor has this infrastructure in place and multilingual help desks to support our future expansion," said Tom Dunigan, corporate network manager at Cabletron Systems, Inc. in Rochester, N.H.

Through BBN Planet, Cabletron will offload traffic for its U.K. office from its private network to the Internet.

With one provider to manage domains worldwide and continued expansion of Internet applications, "we may not need private networks in the future," Dunigan said.

BBN focuses on providing public Internet access, but Scitor seeks to deliver the benefits of both public and private networks.

"Our customers couldn't seamlessly switch between public and private domains, but now they can do that without losing performance and security," said William Bangert, Scitor's general manager for the Americas.

BBN offers 'net "hosting." See page 66.

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'net hype blows through software show

Vendors tout Internet-based computing as a cure-all; users offer a reality check, citing security, budget limitations

By Julia King
BOSTON

The Golden Age of Internet-based computing is just around the corner, if you believe the vendors at last week's Database & Client/Server World show here.

They said cheap and easy-to-deploy World Wide Web software will displace costly and unwieldy client/server systems. Infrastructure and support costs will plummet. User productivity and customer satisfaction will flourish.

Then there is reality, where budget constraints, legacy systems and security factors are too big to ignore.

Massachusetts Bay Community College in Wellesley, Mass., doesn't have the funding or the in-house expertise to convert a new client/server student information system for use over the Internet.

At MetroWest Medical Center in Framingham, Mass., the new management's concern about data security has brought to a halt work on an internal Web-based patient record system.

MetroWest was recently acquired by Columbia/HCA Healthcare Corp. in Nashville.

"The Internet holds all sorts of possibilities, but health care companies are conservative," said Jim Evangelista, manager of medical informatics at MetroWest. "Also, a lot of hospitals are still on mainframe systems with DOS-based PCs."

Security also is a concern outside the health care field. Of 20 Fortune 1,000 companies recently surveyed by Forrester Research, Inc. in Cambridge, Mass., 65% said they wouldn't use the Internet to replace a private wide-area network. More than half cited inadequate security as the chief reason.

But that hasn't thrown vendors off a dizzying course of announcing high-flying Internet strategies and product plans.

For example, a few months ago, browser access to existing client/server applications was news. "Now, it's a no-brainer. Every vendor has to have it," said Erin Golden, director of marketing at Software 2000, Inc. in Hyannis, Mass.

The next step, Golden said, is development of "functional Internet extensions" to applications software. A recent example is Dun & Bradstreet Software's Internet-based SmartStream requisitions application, which lets browser users place electronic purchase orders in to an enterprise SmartStream system.

Meanwhile, only a minority of users are ready to deploy all of what has been announced, said J. Kent Smith, manager of software services development at The Palmer Group, a systems integrator in Wakefield, Mass.

"The technology has to stop racing forward before people [can] put it all together," Smith said. "What's out there now is still pretty much just announcements."

Internet-based client server computing promises:

- Centralized application deployment
- Ubiquitous access via low-cost browser software
- No need to train users in the intricacies of hardware and operating systems
- Centralized monitoring and tuning of applications at the server level
- Reduced hardware upgrades

Source: Performance Computing, Inc., Chicago

Users cautiously explore use of Internet to access corporate databases

By Dan Richman
BOSTON

Many users at the Database & Client/Server World conference here last week had great ideas about how to offer access to their corporate databases via the Internet. But they also had great qualms about actually doing so.

Valerie Howard, a consultant at ATC Leasing Co. in Louisville, Ky., said she wants to let the company's 2,000 truck drivers update driving logs from the road and receive information on road and weather conditions in return.

Nancy Whitney, a systems consultant at Key Corp bank in Cleveland, said she would like to let users check their 401(k) balances so they could see how their investments are faring.

John Murrin, director of PC development at Dexter Shoe Co. in Dexter, Maine, said he would like to give factory-floor workers direct access to inventories.

All these attendees said they will likely use the Internet to accomplish those goals, but not without some trepidation.

"It's great to talk about tearing down the firewall. But how?" Howard asked. "GM and Ford are our customers. We'd love to let them into our database, but they can't have competitors finding out which models we're taking where." That's why ATC Leasing will start with a private network and then think about the Internet, she said.

"Everyone is high on the Internet, but all I've seen out there so far is simple forms to fill out for entering records," Whitney said. "How useful will the Internet be in daily life, handling complex queries with lots of qualifications? We just don't know yet."

Murrin said he doesn't like depending on telephone lines for data access. "With a traditional client/server setup you have a lot more control over the plumbing," he said.

Pundits speaking at the conference said users have little to fear. "It will change the whole ecosystem of business within the next three years," predicted keynote speaker John J. Donovan, CEO of Cambridge Technology Partners, Inc., a venture capital firm in Cambridge, Mass.

The Internet has even made an evangelist out of skeptic Richard Finkelstein, president of Chicago consultancy Performance Computing, Inc. He said the Internet "is a much better way to do client/server computing, a superior model. It's the future."

Conventional client/server computing took a bashing from some users and speakers, who called it inherently unwieldy, complex and outmoded. Hailed only a few years ago as a flexible and cheaper alternative to mainframes, it was a popular target for scorn at the show.

Java-based client/server applications bow. See page 45.

The showtop

Vendor	Product	Price
Syncsort Backup Express 1.0	Fast GUI network backup and restore for Unix, Windows NT and NetWare	$2,500
Compuware Conversion-Xpert 1.0	Converts data among more than 60 Unix, mainframe and desktop DBMS formats	$15,000 and up
Texas Instruments Software WebCenter	Development environment for creating Internet applications	$3,500 and up
Postalsoft TrueName Library 2.0	Parses and standardizes company name for mailing	$3,500 and up
Mercury Interactive WinRunner 4.0	Automatically creates software tests under all versions of Windows	$2,850

DEC to give Unix server clusters high-speed boost

By Jaikumar Vijayan

Digital Equipment Corp. is set to announce the first commercial implementation of a technology expected to significantly boost the performance and availability of clustered Unix servers.

TruCluster, slated to be announced on April 17, is based on a 100M byte/sec. Peripheral Component Interconnect-based technology called Memory Channel interconnect.

"It is a very exciting product," said Jonathan Eunice, an analyst at Illuminata, Inc. in Nashua, N.H. "Most Unix clusters today operate across [technologies such as] SCSI storage interconnect, which deliver at best 20M to 40M bytes of bandwidth. Here we are talking closer to 100M bytes."

"The idea of high-speed memory channeling is very interesting. It sounds like it will reduce some of the bus constraints" in interconnect technologies, said Brent Schmoker, a system engineer at FHP, Inc. in Inglewood, Colo.

Clustering is a performance-enhancing technique in which multiple systems are tied together and work as one system. Software and applications share the cluster's combined resources. The technology is increasingly being used to boost server availability and fault tolerance by uniting two servers.

"It is something we are already considering doing. We deal with a lot of live data, and we want to make sure that we can recover from any problems" as soon as possible, said James Del Genio, a desktop and network development manager at Bell Canada in Toronto.

All in one

TruCluster will merge into one package the capabilities now provided by AdvantageCluster, the company's quartet of cluster offerings, said Terry Shannon, editor of "Shannon Knows DEC," a newsletter in Ashland, Mass. This includes products such as Database Server, File Server and Available Server.

TruCluster will be tightly integrated with Oracle Corp.'s Parallel Server. That will make it easier for users to port applications oo Oracle databases in a clustered environment. Digital, a pioneer in clustering, isn't the only one with such a product. Tandem Corp. has a similar interconnect technology called ServerNet.

DEC's Mutlia platform is a bust so far. See page 39.

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Powersoft

Exchange ships, duels with rivals

By Tim Ouellette

Like baseball teams in spring training, groupware vendors are showing off their latest recruits.

When Microsoft Corp. unveils its long-awaited Exchange messaging and groupware software this week at Networld/Interop, both it and rival Lotus Development Corp. will trot out customers who have decided to move from other mail systems to their respective groupware offerings.

The heated, three-way competition for customers among Microsoft, Lotus and Novell, Inc. could put users in an excellent bargaining position, analysts said.

Exchange is a long-awaited upgrade to Microsoft Mail, Microsoft's LAN-based messaging software. Like Lotus' CC:Mail and Novell's GroupWise 4.x, Mail can be hard to scale and manage at large enterprise sites.

Exchange is a client/server messaging system that includes some groupware features, such as multiuser discussions, forms routing and group scheduling (see chart for pricing).

"The announcements [of user conversions] are indicative of how extreme the competition for this market is going to be," said Matt Cain, an analyst at Meta Group, Inc. in Stamford, Conn.

For example, The Boeing Co. in Seattle and its 65,000 users are moving from a hodgepodge of messaging systems, including CC:Mail and Notes, to Exchange, which it is running on Microsoft's Windows NT Server platform.

"We wanted to go to NT Server to be consistent with our desktop environment [Windows] and for the administration of the system," said Bob Jorgensen, a Boeing spokesman.

Accounting giant Ernst & Young is moving the other way. It will move 66,000 users from Microsoft's Mail 3.x to Notes 4.0, which shipped in January.

The firm switched to Notes because Mail wasn't running well in a mixed PC/Macintosh environment and because Exchange is limited to the NT Server platform, said Jeff Held, a partner at Ernst & Young's Technology Services Practice in New York.

But price won't be the only factor. Analysts and users agreed that the upgrade decision often will depend on a firm's platform.

"Users may look at Exchange and see that it doesn't have the same kind of strong development environment or platform support as Notes 4.0, while others may say that Exchange does a lot of what Notes does [at] a lower cost," said Ian Campbell, an analyst at International Data Corp. in Framingham, Mass.

Microsoft and Lotus also will announce migration tools aimed at smoothing the switch from rival messaging products.

Lagging behind is Provo, Utah-based Novell, which won't ship its GroupWise XTD upgrade until this summer. Although there is a loyal following of GroupWise users, analysts said Novell will be hard-pressed to grab sales beyond its base of networking customers.

Let the bidding begin!

Users may have a chance to haggle over these prices for groupware:

	Microsoft's Exchange	Lotus' Notes 4.0	Novell's GroupWise 4.1
Client	$54	$55 Notes Mail only $69 Notes desktop $275 Notes developer	$625 (five-user pack)
Server	$529	$495	$2,495
Simple Mail Transfer Protocol connection (Internet Mail)	$377	$2,295	$2,995
Total cost for 100 users*	$6,500	$9,200	$13,900

*Costs based on volume discounts

ATM options

CONTINUED FROM PAGE 1

can add 25% to the total price. And the associated learning curve can push implementation back by months, Eisenlohr added.

Cisco's salvo is NetFlow, a router-based technology that will reportedly provide the same speed and quality of service as ATM networks but via familiar routing devices.

The idea is to significantly cut administrative costs, which typically account for 40% of total networking budgets and under ATM can rise even more, said Eric Hindin, an analyst at The Yankee Group in Boston.

Unbeknownst to users, NetFlow is already embedded in Cisco's Series 4000 and 7000 routers, sources close to the firm said. Cisco had planned to let the cat out of the bag in late spring, according to internal company documents obtained by *Computerworld*.

If Cisco is taking a top-down approach, initially targeting enterprise backbones, Cabletron is tackling ATM from the bottom up, at the intranet level.

Available within 90 days, Cabletron's SecureFast Virtual Switching (SFS) embeds high-performance routing into all Cabletron 1960-based switches and hubs released since 1993. That lets users use the switches and hubs to build virtual networks that deliver ATM-like performance and benefits (see related story and chart).

After three years of ATM hype, the time is ripe for alternatives, said Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J. "What Cisco and Cabletron have done is create proprietary switching schemes that are more complete than ATM and woo't stop users from moving to ATM later," Nolle said.

Hindin added, "Users are clamoring for higher bandwidth and guaranteed quality of service." NetFlow and Cabletron's SFS could significantly delay ATM implementation because they are much easier to upgrade — "there's [virtually] nothing new to learn," he insisted.

Selby Wellman, Cisco executive vice president, declined to detail NetFlow beyond characterizing it as a "follow-on" to Cisco's Fusion strategy. Cisco is committed to ATM, but, he hinted, "it won't be the ooly big player" in high-bandwidth connection-oriented technologies.

"Customers have been kicking the ATM tire for the past two years, delaying implementation mainly because of the pain and grief in migration. If there's an alternative that users can adopt with minimal interruption to their network, why rip everything out just for ATM?" Wellman asked.

Best of both worlds

Functionality gain minus migration woes appealed to an information systems manager at an Internet service provider who was briefed by Cisco. The manager, who requested anonymity, said NetFlow gives him all the benefits of ATM — high-bandwidth speed and quality of service — while minimizing the need to make expensive changes to the network.

"That saves me time, money and lets me administer my networks without adding new management staff. Best of all, it cuts down on my Excedrin intake," the manager said.

James Wiedel, director of networking at the University of Southern California in Los Angeles, said, "USC may consider testing ATM at some point in the somewhat distant future, [but] SecureFast works well and is available now. ATM is still emerging and is largely unproven."

High-bandwidth options

ATM	Cisco's NetFlow	Cabletron's SecureFast Switching
• Connection-oriented switching • Quality of service • 155M bit/sec. • Requires major changes to the existing network infrastructure	• Connection-oriented switching mimics ATM quality of service • Requires new router interface cards and processors • NetFlow firmware included in the past two releases of the Series 4000 and high-end routers • Runs on the Series 4000 and 7000 routers; a new interface-specific platform ships in 18 to 24 months	• Connection-oriented switching mimics ATM quality of service • Provides various switched Ethernet and 100M bit/sec. FDDI • Requires the SecureFast Switched Client firmware upgrade and the SecureFast Virtual Network Server

SecureFast flavors

As expected, Cabletron this week at Interop will formally unveil its high-bandwidth alternative to ATM — the SecureFast Virtual Network technology [CW, March 25].

There are four separate SecureFast components. They are:

- **SecureFast Virtual Network Server**, which delivers ATM quality of service to Cabletron's Spectrum network management platform. It costs $45,000.
- **SecureFast Switched Client software**, which lets administrators make all changes in software, obviating the need to physically make changes to network configuration. Pricing depends on the platform.
- **VLAN Manager**, which provides administrators with ATM connection-oriented access to monitor users and devices anywhere on the network. It costs $5,995.
- **VNET Manager**, which provides detailed audit trails and a breakdown of network usage charges by user and departments. It costs $15,000.— *Laura DiDio*

IBM's SystemView benefits from Tivoli buy

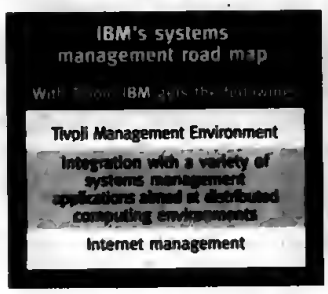
By Bob Francis

IBM is expected to tease Networld/Interop '96 users with a glimpse of its plan for linking Tivoli Systems, Inc.'s distributed management environment to IBM's SystemView, according to sources briefed by the company.

As expected, Tivoli will become the basis for IBM's distributed management strategy, with NetView for AIX — IBM's Unix offering — integrated into the Tivoli Management Environment (TME). IBM also plans to add the data center-oriented SystemView for MVS to TME, the sources said.

But beyond that, there is still plenty of work to do in terms of ironing out which systems management tools supported by NetView will also be supported by TME. And that will take time, sources said.

"We expect to see more definitive product integration by early next year," said Paul Mason, an analyst at International Data Corp. in Framingham, Mass.



IBM purchased Tivoli for $743 million in February, and since then, users of IBM and Tivoli systems management products have wondered how the firms would meld their complementary technologies.

Cooperation key

Stephen O'Pry, information systems manager at Montell USA, Inc., a chemical manufacturer in Wilmington, Del., said it will be best for IS managers if the two firms work well together. "IBM has a good handle on the mainframe side of the house, and Tivoli knows the distributed side," he said.

IBM will try to reassure Tivoli's developer partners that it will maintain the autonomy of the division. It will be based in Austin, Texas, and will be run by its current CEO, Frank Moss. Moss is an alumnus of Lotus Development Corp. — another high-profile IBM purchase — and IBM.

Tivoli partners with independent software vendors and other systems management providers who link with the firm's TME. Some of those software vendors, such as Legato Systems, Inc. in Palo Alto, Calif., have products that compete with IBM's storage management offerings. "IBM's got to maintain Tivoli's independence or [it] will lose its value to IBM," said John Dunkle, president of Workgroup Strategic Services, Inc. in Portsmouth, N.H.

IBM had promised distributed systems management tools with SystemView for some time. But when it failed to deliver, IS managers began off-loading applications from mainframes to distributed systems. The Tivoli deal fills in that gap but raises questions about what will happen to IBM's distributed systems management tools.

According to sources at IBM who have watched the infighting between the SystemView group and the new Tivoli division, Tivoli has emerged with a good deal of the clout needed to call its own shots.

As if to emphasize its independence, Tivoli recently joined with SunSoft, Inc. to define management interface standards for Internet software.

Systems managers gain more Internet control. See page 59.

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EXCALIBUR TECHNOLOGIES
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Driving a virtual bargain

DealerNet builds, runs Web sites for automobile dealers

By Mitch Wagner

Maybe it's called the information superhighway because there are so many car companies there.

Gulf States Toyota, Inc., a southeastern U.S. car distributor, recently signed a deal with DealerNet, an on-line host firm, to put its 140 dealers on the Internet. This is the latest in a series of recent agreements for DealerNet, a business unit of Reynolds and Reynolds Co. in Dayton, Ohio.

DealerNet's clients said they were drawn to the company because it can provide a complete Internet installation. The firm builds Internet sites and runs them, leaving information systems managers free to run the rest of their business in peace.

"Other automotive Web site builders cannot offer that type of service with DealerNet's kind of quality," said Walter Rich, electronic communications specialist at Saab Cars USA, Inc. in Norcross, Ga.

By May 1, 590 Toyota and Saab car dealers nationwide will start going on the World Wide Web via DealerNet. DealerNet currently has 140 car dealerships of many makes on-line. And there are more than 600 dealers listed in the Yahoo directory, a Yellow Pages for the Web.

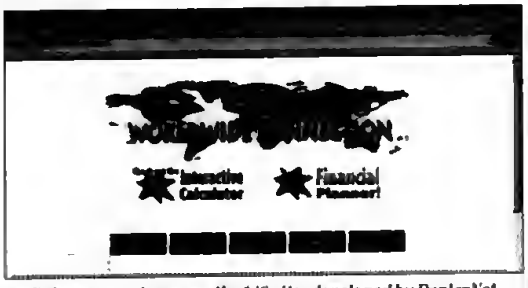
DealerNet's end of the bargain will be to design and host Web sites that provide information about the dealerships and their products, management and community activity.

Parental clout

The Reynolds and Reynolds link is an important one for user firms. DealerNet's parent company is a $911 million outsourcer that serves the automotive and health care industries. "We already have the relationship with Reynolds and Reynolds, so they're a proven service for us," said Angie Sherrell, director of dealer services at Gulf States Toyota.

That link to an outsourcer also means dealers will eventually be able to easily integrate the Internet into their other business systems. For instance, Saab Cars USA is considering making auto service records accessible on-line so customers can use the Internet to check whether it is time to get their oil changed or have other scheduled maintenance done.

"It opens up future possibilities for dealers and customers to tie the Internet in to back-office facilities," Rich said.



Ford's home page *is among the 140 sites developed by DealerNet. Dealers will be able to link their other systems to the sites in time.*

As the urge to do business on the Internet grows, companies are looking for vendors that can provide both Internet connectivity and traditional IS needs.

And systems integrators and outsourcers are responding. For example, Electronic Data Systems Corp. in Plano, Texas, opened an Internet business unit last year, as did boutique systems integrator Cambridge Technology Partners, Inc. in Cambridge, Mass.

For car dealerships, the spark of attraction between them and the Internet lies in the 'net's near-instant access to reams of information.

"Buying a car is a complex purchase," said Gary Nielsen, marketing programs and special events manager at Ford Motor Co. "People try to gather as much information as they can before going into buying mode."

DealerNet runs on twin Silicon Graphics, Inc. Challenge DM servers that are located in its offices in Seattle.

The servers are connected to the Internet via two T1 lines provided by Interconnected Associates, Inc. in Seattle.

Shipping firm weighs an intranet. See page 65.

Java bug; users shrug

By Frank Hayes

Researchers at Princeton University have found yet another security problem with Java, Sun Microsystems, Inc.'s language for developing applications for the World Wide Web.

And Sun, which learned of the problem in a routine call to the Princeton researchers on March 22, has again provided a quick fix, the Mountain View, Calif.-based company said. The fixes will be in a new release of the Java Development Kit due early this month.

Netscape Communications Corp., which supports Java in its Navigator 2.0 browser, said it will implement the changes within weeks.

This cycle of bugs and fixes is becoming routine for corporate developers actively using Java for major applications.

"The official release of Java is 2 months old now, and already we're down to a very minute level of bugs that Sun fixes immediately," said John Gawkowski, a Java application architect at R. R. Donnelley & Sons Co. "If anything, that gives me more confidence."

Java grounds

The most recent Java problem isn't in the language but in the interpreter that executes Java code. Three Princeton researchers handcrafted a Java applet that could generate and execute raw machine code, sidestepping the Java interpreter's built-in security. A maliciously designed applet could thus perform many operating system functions, such as reading or deleting files.

Trade show offerings

Meanwhile, development tool vendors at last week's Software Development West in San Francisco made these announcements:

- Sun unveiled Java WorkShop, a Java development environment built inside a Web browser. The $295 tool set runs on Windows 95, Windows NT and Solaris. It will ship in May.
- Interactive Development Environments, Inc. in San Francisco is retrofitting its Software Through Pictures object-oriented analysis and design system to generate and reverse-engineer Java code. The Java version will be available in May; prices start at $12,000.
- PostModern Computing in Mountain View, Calif., is shipping BlackWidow 1.0, which connects applications written in Java to object middleware. It costs $99 per user.

Cabletron

CONTINUED FROM PAGE 1

further out.

A Bay spokesman doubted the firm's customers would use Bay-B-Huey, but he nonetheless cautioned those that may consider it. "I'm not sure any System 5000 user would buy this product," he said. "I think users would be more likely to make a vendor switch than buy this. From a management perspective, we're not going to support their modules, so manageability becomes a major issue, one that gets real messy."

Adding switching to internetworks typically means far less contention among users for bandwidth, fewer, if any, choke points in the network, quicker response times and higher net throughput.

"We don't want to wait for switching in the 5000s," said Barbara Maaskant, director of information services at the School of Public Health at Emory University in Atlanta. She was briefed by Cabletron on the product. The university uses System 5000s and Cabletron switches. "This is a definite check mark on my wish list and something we'd love to get our hands on," she said.

Maaskant said Bay-B-Huey would let Emory build a large Cabletron network and protect its large investment in Bay hubs. This configuration would mean systems administration and management could be done from one management package, she said.

Another issue for some users is that Bay-B-Huey connects to the System 5000's front panel instead of its backplane, which results in a less smooth integration.

But some users are willing to overlook such issues.

"When you think of how long it has taken Bay to deliver the switching they've promised with the 5000, it makes sense to look at something like the Bay-B-Huey, which is based on proven technology — technology we already use separately from the 5000s," said Bob Currier, director of network communications at Duke University in Durham, N.C. "No one wants to throw out 5000s, but everyone wants switching, and Cabletron has it."

Bay-B-Huey

Cabletron's [illegible] hardware package has [illegible] modules and supports SecureFast Virtual [illegible] networking scheme. Other features include [illegible]

Power: 750,000 packets per second

Switching modules available: Ethernet ($500 per port), FDDI and Token Ring

Comparative Bay Networks products: Ethernet ($750 per port), FDDI due toward the end of the year and Token Ring due out even later

Availability: In 90 days

Pricing: $2,595 for the chassis, $13,695 for the controller, $12,395 for Ethernet switching and $6,395 for FDDI switching

For Bay users, the biggest drawback of the Cabletron plan is that they probably won't be able to manage Bay-B-Huey from Bay's Optivity network management system. But the System 5000 and the add-on can be managed by Cabletron's Spectrum.

Bay officials said that since the company doesn't know anything about the Cabletron product, it can't explain how Cabletron could deliver as much switching to the 5000 before Bay could.

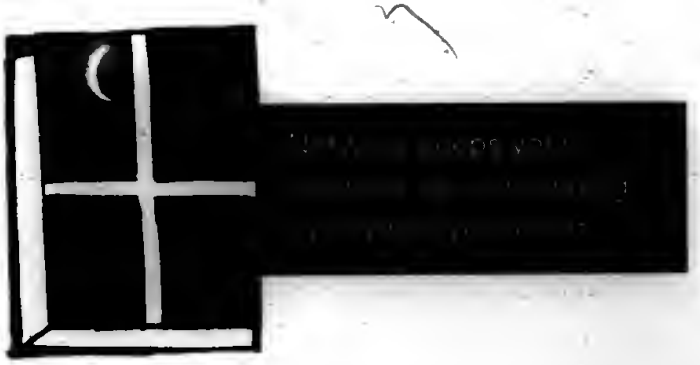
Currier said Bay-B-Huey is a good move for users who want FDDI switching because Bay hasn't even revealed product details for this type of high-speed LAN switching (see chart).

The Cabletron package will support the switch vendor's SecureFast Virtual networking capabilities (see related story, page 1). Analysts said Bay-B-Huey will hurt Bay.

Bay-B-Huey "will be most useful for the large number of these companies who are looking to standardize on one vendor," said Eric Hindin, an analyst at The Yankee Group in Boston.

Cabletron can offer switching ahead of Bay because it developed application-specific integrated circuits, the brains of switches, well ahead of Bay, Hindin said.

Bandwidth-busting tips. See page 55.



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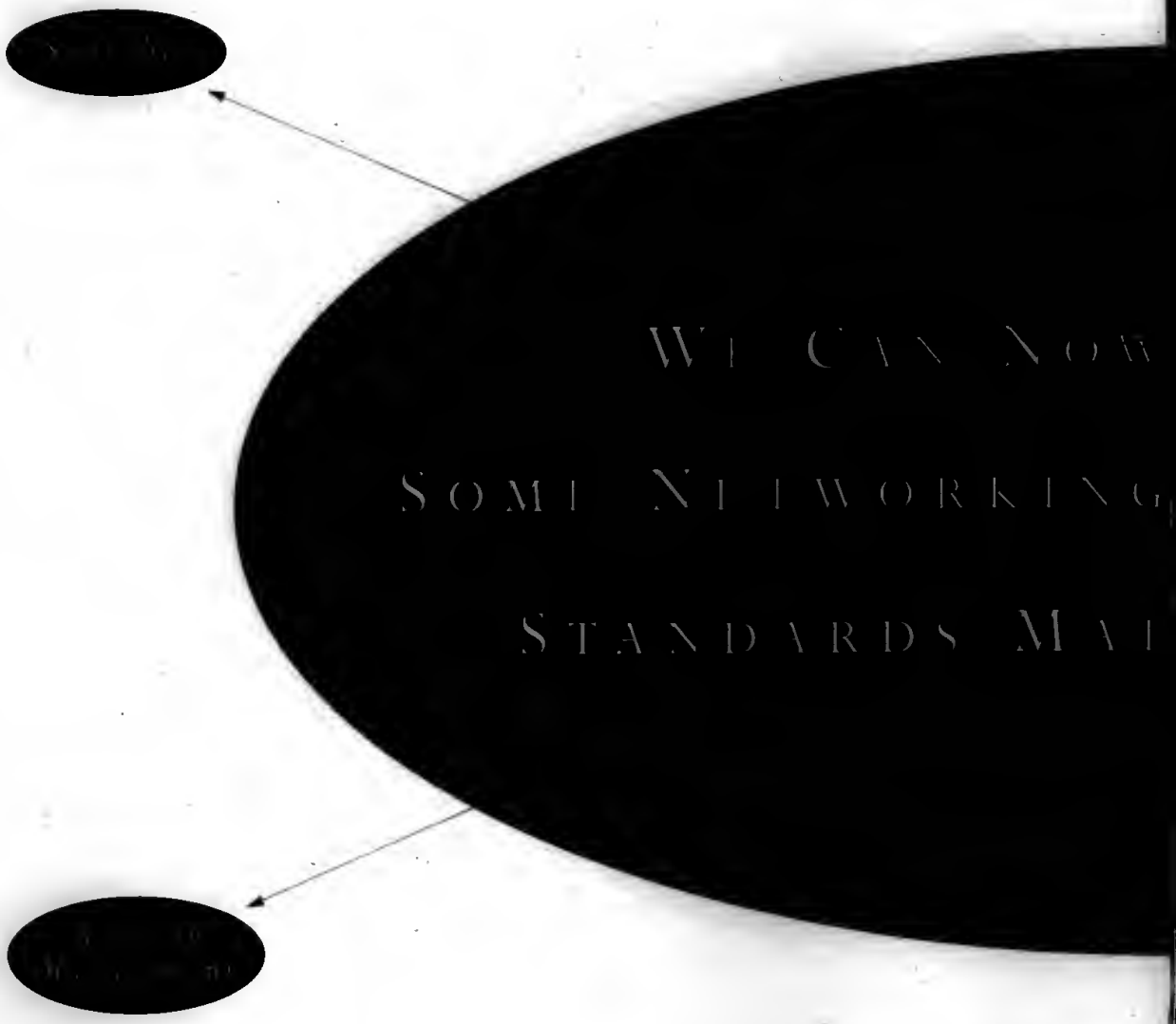

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COMPAQ Has It Changed Your Life Yet?

Imaging takes backseat at AIIM expo

BackOffice products, Web technology top list of ways to speed workflow

By Tim Ouellette and Stewart Deck

The Association for Information and Image Management (AIIM) conference this week in Chicago will be long on information and short on image. Traditionally, the AIIM show has focused on imaging technology, but the growing interest in document management and workflow has made imaging just another data type to be viewed, routed and stored. In fact, when AIIM asked vendors to categorize their products, no one chose imaging, said James Breuer, senior vice president for marketing at AIIM.

"Imaging has crested as a technology application. The focus is now on the image as data," said Nathaniel Palmer, a senior market analyst at Delphi Consulting Group in Boston. Two hot areas that will be featured prominently at the show are products based on Microsoft Corp.'s BackOffice suite and the use of Web technology to improve workflow, Palmer said.

This year's show will reflect the buying and consolidation binge that has racked the market since last year's event in San Francisco. Market leaders FileNet Corp., Wang Laboratories, Inc., IBM and Adobe Systems, Inc. all bought companies last year.

Waiting to unveil

Vendor announcements at AIIM will include the following:

- **IBM** will unveil a Notes client interface to its FlowMark workflow management software. This will give FlowMark and Notes a common user interface and sets up FlowMark work items to appear as a Notes table of contents.
- **Wang** and **Microsoft** will provide an update on the Messaging Application Programming Interface (MAPI) Workflow Framework that both companies are developing. The standard will enable communication between structured workflow applications and electronic-mail software packages that use Microsoft's MAPI to deliver messages.
- **Action Technologies, Inc.** in Alameda, Calif., will announce Action Workflow Enterprise Series 3.0, a workflow software suite targeted at enterprise workflow use beyond the departmental confines of traditional, high-volume workflow systems. It includes Process Builder, Process Manager and Software Developer Kit modules. Starter kits for 10 users will cost $9,995.
- **Optika Imaging Systems, Inc.** in Colorado Springs, will announce an upgrade to its workflow and imaging suite, which will add a viewer for 150 data types and the ability to create file workbook packages that can be sent to users who don't have Optika software.
- **IA Corp.** in Emeryville, Calif., will show off WorkVision 4.0, a high-end, object-oriented, work management software package designed for high-volume, production-oriented applications.
- **Keyfile Corp.** in Nashua, N.H., will demonstrate wide-area workflow with KeyFlow, which runs off Microsoft's Exchange Server. **PC Docs, Inc.** in Tallahassee, Fla., and **Documentum, Inc.** in Pleasanton, Calif., are teaming up to demonstrate a query extension to the Open Document Management application programming interface standard. The extension will let users access and query multiple document management systems from a desktop application.

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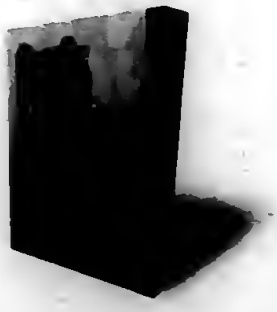

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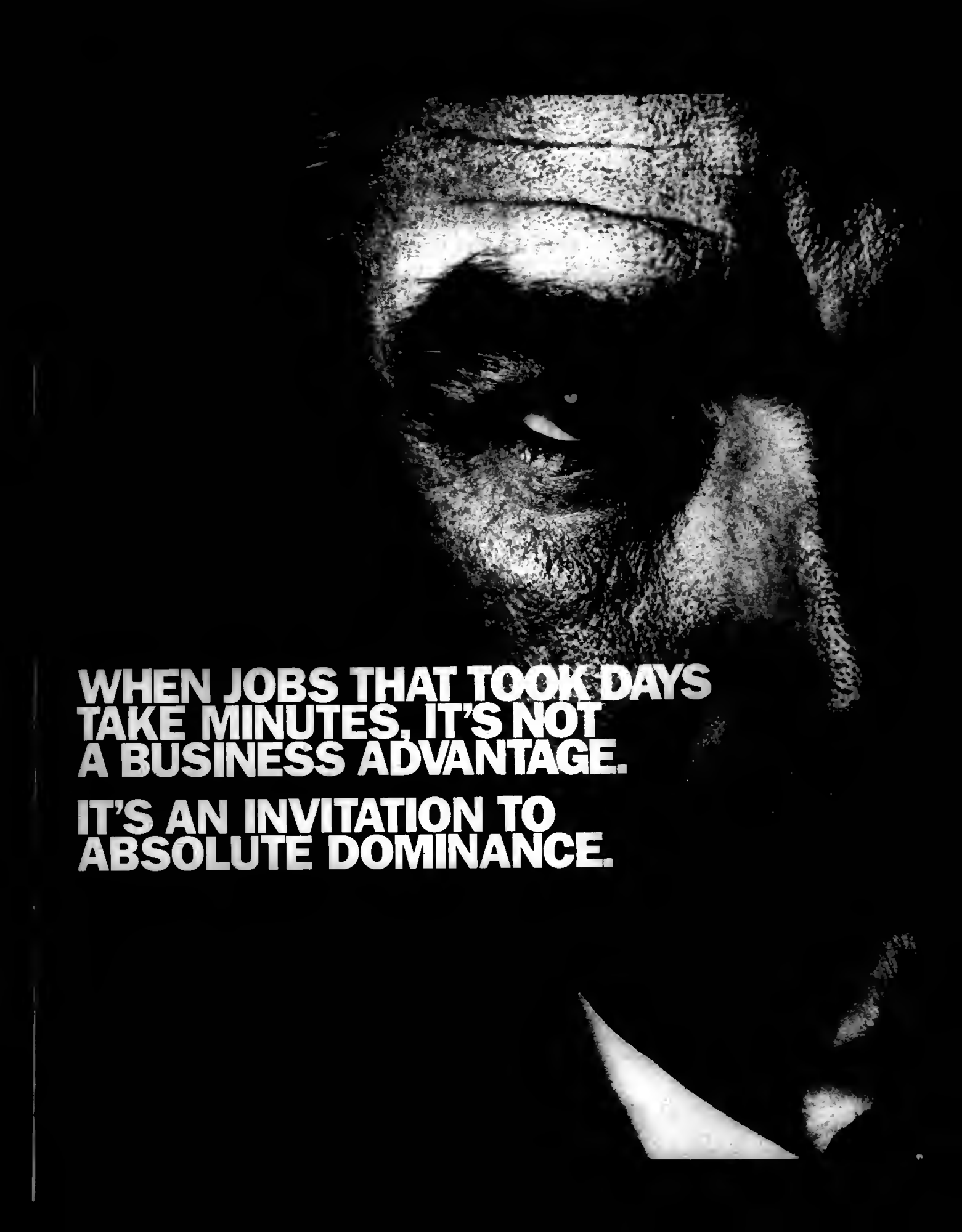
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Users strike on-line service gold

By Mitch Wagner

Users seeking big buddies to look out for them on the Internet got a passel of new choices at the Internet and Electronic Commerce conference last week.

America Online, Inc. announced at the New York conference that it plans to open its on-line service to private, corporate forums. That would allow users to harness its network for intranet functionality.

MCI Communications Corp. unveiled new hosting services for World Wide Web sites. Digital Equipment Corp. said it will add new payment-processing software to its Internet server line.

And General Electric Information Services (GEIS) said it plans to launch an on-line service that caters to small business.

The services are aimed at companies that want to leverage the resources of a big vendor. "America Online, for instance, already has a network in place. You don't have to provide the support, just the content," said Marty Isozaki, director of MIS at Long Beach Community Medical Center in Long Beach, Calif.

Bill Bass, an analyst at Forrester Research, Inc. in Cambridge, Mass., agreed. But he added that large companies such as America Online, MCI and GEIS might find it difficult to provide the creative talent that business will require to succeed on-line. User companies might be better off choosing smaller, specialized on-line businesses, he said.

GEIS, MCI and AOL "are stumbling around looking for a gold mine. Maybe they'll be able to find the gold mine stumbling around — but they're not taking sure, purposeful steps," Bass said.

I dream of Genie

GEIS recently sold the Genie on-line service to Yoyodic Renaissance Corp. The service had a peak of about 400,000 customers in 1994, but membership was less than 50,000 last year.

America Online, based in Vienna, Va., has launched America Online Enterprise, a division designed to set up users in private forums on the AOL network using the on-line service's software.

These "private AOLs" would be an alternative to a similar service offered by competitor CompuServe, Inc., private bulletin board services or groupware such as Notes — all of which are designed to allow groups of people to collaborate and share data in a secure fashion.

MCI, which is based in Washington, has launched MCI WebSite services, where MCI will build Web sites for users and maintain and operate the sites at MCI's headquarters.

The Digital and GEIS announcements were long on promise and short on specifics. Digital said it plans to incorporate an on-line payment plan from CyberCash, Inc. into its Web servers. Reston, Va.-based CyberCash offers a secure service to allow users to pay for goods, information and services on-line.

Meanwhile, GEIS, fresh from its flop with the Genie consumer on-line service, is launching the GE BusinessPro on-line service for business-to-business services, beginning April 3. The service was designed to provide assistance with sales leads, business discussion, discounts on express mail, hotels and other business needs, and consulting services.

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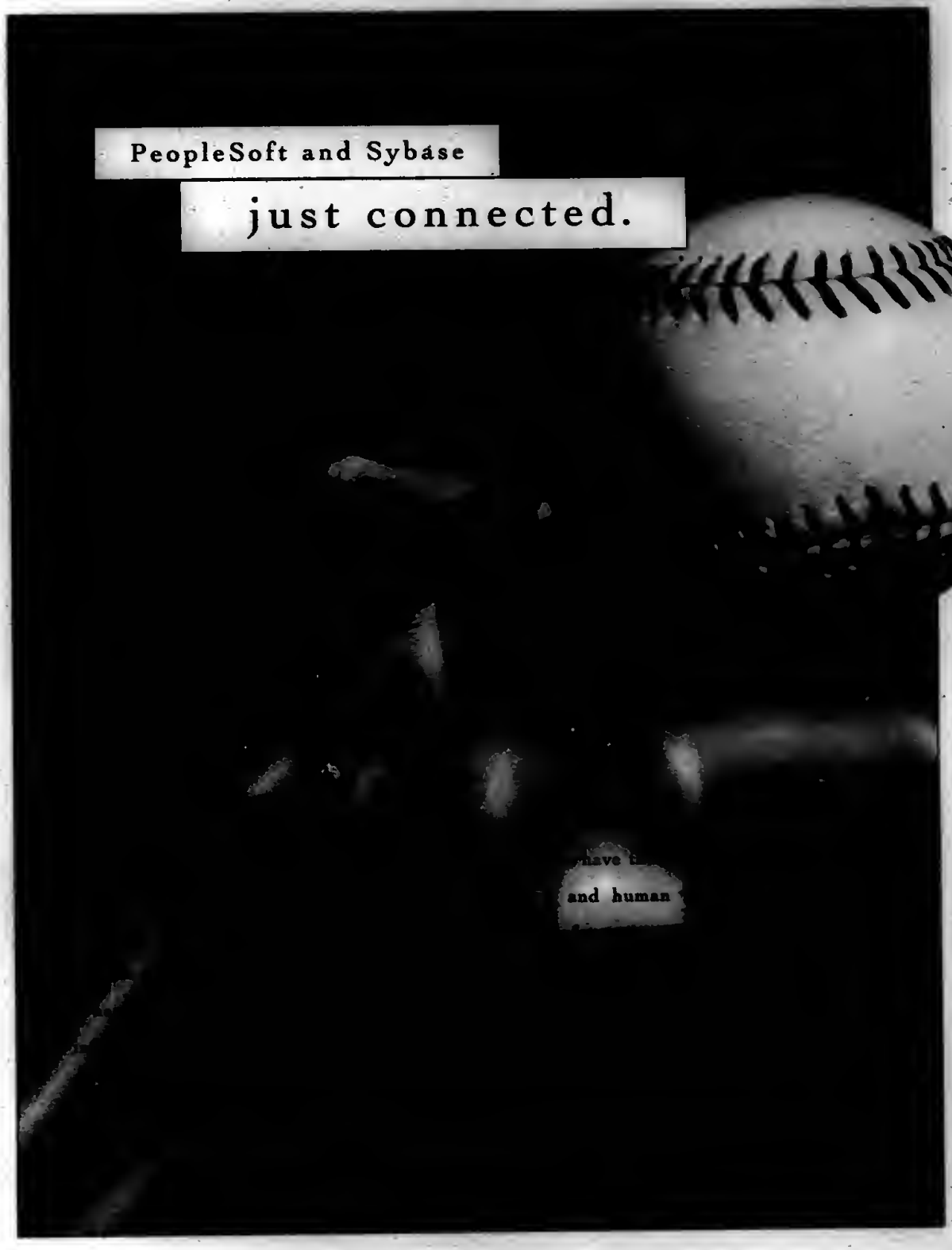

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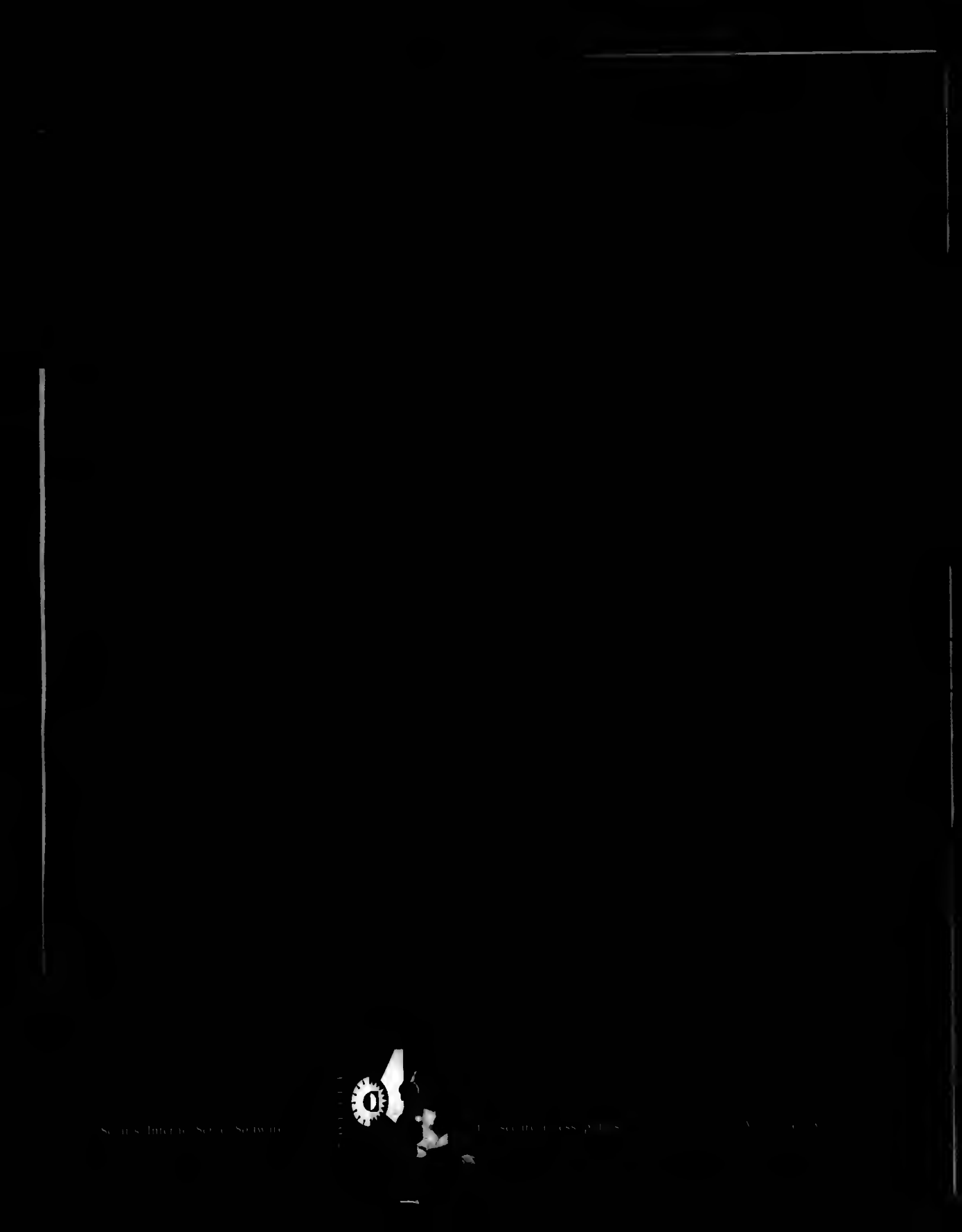

SunSoft

Blasting out the intranet sound

By Kim S. Nash

Progressive Networks, Inc wants to raise the noise level — literally — in corporate intranets.

The Seattle-based vendor this week will ship a revamped Real Audio package for transmitting voice and music on-line for use in internal corporate intranet applications.

But Progressive will have to overcome information systems managers' doubts about whether audio is too bandwidth-hungry to work well and whether there is even a need to add voice to internal applications.

Sounds of skepticism

IS groups said they are interested but remain skeptical. "I want to feel confident that it will work before I offer it to [my users]," said Mike Richling, a systems analyst at the Department of the Environment, a Canadian government agency in Ottawa.

Some IS managers said the flash of multimedia just isn't necessary in telephone directories or human resources information — applications for which most intranets are used today.

But Progressive disagrees. If there were a simple way to add audio to programs, IS would find new uses for it, said Rob Glaser, president and CEO of the 2-year-old company. For example, users could put executive speeches on-line or add audio to computer-based training courses, he said.

To that end, Real Audio 2.0 includes the following new features:

- Links to popular security firewalls.
- The ability to customize Real Audio with Sun Microsystems, Inc.'s Java, Macromedia, Inc.'s Shockwave and other tools.
- Tweaks that allow users to send audio at 8K bit/sec. rather than the 16K bit/sec. rate normally used.

Real deal

Progressive Networks will cut prices on its Real Audio server . . .

	OLD PRICE	NEW PRICE
[illegible]	NA	[illegible]
[illegible]-stream server	$1,495	NA
[illegible]	[illegible]	[illegible]

. . . and introduce special pricing for intranet users

5-stream server	$495
[illegible]	[illegible]
Unlimited-stream server	$3,995
[illegible]	[illegible]

NA= Product not available

New prices also are on the menu for Real Audio 2.0 (see chart).

Bob Yurkovic has added audio to his intranet. The manager of the information solutions group at Lucent Technologies, Inc. lets select users hear daily news broadcasts, spoken memos and speeches. Lucent, in Whippany, N.J., makes products for wireless computing.

Yurkovic's system uses a previous version of Real Audio that doesn't sport intranet-specific features, and that is a problem, he said. The high bandwidth that the audio signals require means that only 40 users can access the system.

Version 2.0 should help, he said. Plus, Lucent is working with Progressive on ways to split audio signals into smaller chunks that can be more quickly and easily transported. Until then, adding any more users "would kill us," he said.

Former agency CIO: Give project time

Few people have been as deeply involved in the IRS' modernization project as Henry H. Philcox, who retired last year after six years as the agency's CIO and the person directly responsible for much of the modernization effort.

Henry H. Philcox, *now retired as the CIO of the IRS, defends the modernization effort*

Not surprisingly, Philcox last week staunchly defended the agency's technological track record, saying its critics are misinformed and unrealistic in their expectations.

He claimed the public hasn't yet seen many benefits from the project because most of the investment so far has been in the infrastructure — such as designs, plans, networks and buildings — on which applications are to be built.

"If you're building a building, and it is one-third finished, it's kind of ludicrous to ask why you haven't moved people into it yet," he said.

Part of the problem, Philcox said, is that Congress has slowed several promising projects. For example, he claimed funding cuts for the system have delayed the national rollout of a new collections system, which increased tax collections by 28% in a New Orleans pilot project.

Philcox agreed with critics that the IRS doesn't have all the required management and technical expertise in-house, arguing that much of that should come from contractors.

While he said the project remains very difficult, Philcox nonetheless asserted that "any cancellation of the program at this point would be criminal."

Congress seems unpersuaded by Philcox's arguments, and cancellation remains a real possibility, said a senior congressional staffer who requested anonymity. "The IRS has to show us something in the next couple of months, or this is going to be a real tough sell in Congress," he said.

— Gary H. Anthes

IRS computer project in peril

CONTINUED FROM PAGE 1

we'll put together a plan and have something to show for it,'" said Rep. Jim Lightfoot (R-Iowa), chairman of the Subcommittee on Treasury, Postal Service and General Government.

"This committee is, as of today, out of the business of providing the [Treasury] Department with billions of taxpayer dollars for what is in essence the construction of a house that lacks a blueprint," Lightfoot said. That means the IRS could be out of luck.

The modernization program is intended to improve customer service and tax compliance by providing more accurate and timely data to the IRS. It also is supposed to cut processing time and cost by allowing electronic filings.

Rep. Jim Lightfoot *says it is time to pull the plug on the project*

But after a decade of effort, $3 billion in spending and some isolated successes, the IRS is still inexplicably floundering in its overall attempt to modernize its antiquated systems, critics say.

Last week, the U.S. General Accounting Office reported the IRS would delay introducing its Cyberfile option for electronic filing to an unspecified date after April 15. The GAO cited various management and technical lapses that led to poor system security.

In reviews stretching back six years, the GAO and the National Research Council (NCR) have consistently faulted information systems management practices at the IRS. In particular, they said the IRS has failed to develop a comprehensive systems architecture and has weak technical management and primitive development practices.

According to Robert P. Clagett, chairman of the research council committee that has written six reports about the tax modernization system, poor IS practices at the IRS are due to its failure to bring in senior technical managers skilled in large systems development.

"Almost all the current executives have come up through the ranks, almost none with technical education," he said.

C. A. Irvine, another research council committee member, was somewhat more sympathetic to the IRS' plight. It suffers from the combined load of government regulations — which hinder flexibility — and an enormously complex systems task, he said.

"On balance, we agree with the assessments in the GAO and NRC reports," said IRS Commissioner Margaret Milner Richardson at a congressional hearing last week.

Source: General Accounting Office, Washington

She said the IRS is strengthening and centralizing its IS management and adding more rigor to the process by which it makes IS investment decisions. The IRS also recently hired a chief information officer to replace CIO Henry Philcox, who left the agency last year (see related story at left).

Richardson also said the IRS is preparing four reports, to be delivered to Congress within 30 days, that detail what steps the IRS has taken and will take to get the modernization project on course. One report will also contain an inventory of systems prioritized according to investment payback to the public.

But Gene L. Dodaro, an assistant comptroller general at the GAO, said there is "little tangible evidence that actions being taken will correct the pervasive management and technical weaknesses that continue to place [the project], and the huge investment it represents, at risk."

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A few thoughts about motivation and UNIFACE application-building strongware from Jim Rutherford, President/General Manager, Hartford Whalers

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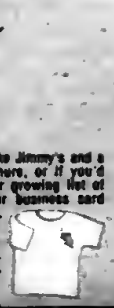


Computer Industry

David Packard 1912 - 1996

'You shouldn't gloat about anything you've done; you ought to keep going and find something better to do.' — David Packard

By Craig Stedman

David Packard, one half of the duo that founded Hewlett-Packard Co. and pointed the way toward Silicon Valley in the process, died last week. He was 83.

Packard and partner William Hewlett borrowed $538 and started HP in 1939 in a Palo Alto, Calif., garage that has become an icon and an official state landmark.

As the company grew, Hewlett became its technical guru, while Packard was president and later chairman and CEO of HP. Packard had been chairman emeritus since his official retirement in 1993.

Under their leadership, HP developed a strong technical reputation in a succession of industries, including computers in the 1970s. Packard and Hewlett also were credited for their innovative approach to management.

They implemented an egalitarian style that downplayed the then-prevalent reliance on strict corporate hierarchies. HP was a pacesetter in providing employee benefits such as profit sharing and flexible scheduling.

In a statement issued last week, the 82-year-old Hewlett said the code of ethics and management philosophy that Packard created for HP was "the greatest thing that he left behind him."

Packard continued to be a key figure at HP into this decade, when the company emerged from a lackluster period to become the second-largest computer vendor behind IBM.

Packard had semiretired in the 1980s, but he came back to the company in 1991 to lead an operations committee that reorganized HP and set the stage for it to become the dominant force in commercial Unix servers.

"Things really weren't taking off the way he [had] hoped" in the Unix business, said Tom Willmott, an analyst at Aberdeen Group, Inc. in Boston. Packard was able to "refocus the company's business thrust and move it toward huge gains in profits and revenue," he said.

The scientific instruments and testing equipment that HP initially focused on were heavily used by the Department of Defense, and Packard served as deputy secretary of defense from 1969 to 1971. In the mid-1980s, he chaired a presidential committee that recommended major changes in defense procurement policies aimed at reducing spending.

Apple offers 700 million reasons to question health

By Melissa Bane

They may be breaking out the survival kits in Cupertino, Calif. Apple Computer, Inc.'s warning that it will likely post a $700 million loss for its second quarter had analysts betting on the company's long-term chances last week.

Apple's problems — and they are legion — can be fixed, according to Apple's new CEO Gilbert Amelio. He said he will unveil his battle plan next month.

Analysts said the ball is in Amelio's court, and time is growing short to create a turnaround. Apple has been unable to fill high-end system orders because it is overwhelmed by unsold consumer inventory and under attack in key market sectors. All this as it begins layoffs of 1,300 employees.

The company also suffers from the same general slump in PC sales that is affecting the desktop PC industry, said Karen Moser, a senior analyst at Aberdeen Group, Inc. in Boston.

The forecasted loss, compared with $73 million in earnings in the same quarter last year, has brought some analysts to the conclusion that Apple is dead in the corporate waters. Apple is now left with its core markets of education and graphics, but even those stand to be snatched away if the company doesn't quickly adopt an aggressive strategy.

"We're definitely entering a phase where it's make-or-break-it time for Apple," said Dean McCarron, an analyst at Mercury Research, Inc. in Scottsdale, Ariz. "They have about a year to get on their feet."

More than half of the forecasted loss is attributed to inventory write-downs; $175 million is tied to restructuring charges. Final results for the quarter are expected in the third week of April.

Apple's rot comes from bad planning, said Tom Rhinelander, an analyst at Forrester Research, Inc. in Cambridge, Mass. Apple first underestimated product demand last year and then overestimated demand in its fourth quarter, he said. This, combined with customer unease about the company's financial status, has left Apple facing $15 million worth of product returns.

Then, there is the PC sales slump. Semico Research Co. in Phoenix said PC unit sales growth worldwide is expected to decrease 6% this year, compared with a 21.4% growth last year. But Apple's problems aren't as simple as an inability to accurately forecast demand, McCarron said. The reluctance to license its technology early on has caused problems for the company, he said.

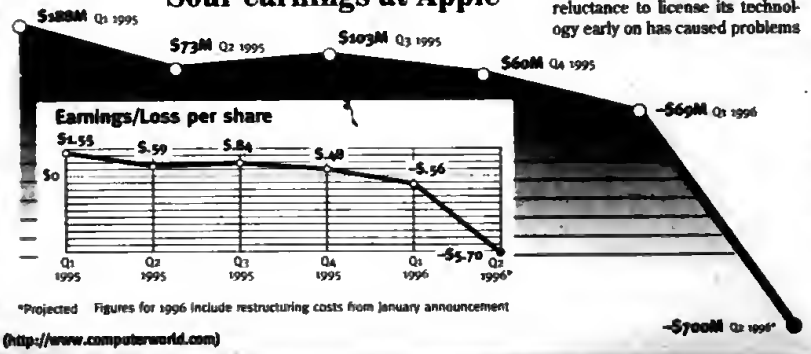
But analysts said there still may be hope for the company to gain strength through this area.

The company also needs to rely less on its hardware, Rhinelander said. He suggested Apple could streamline its operations even further than the 1,300 layoffs it announced in January. Apple wouldn't comment on the possibility of more layoffs.

Rumors of a possible takeover, combined with last quarter's loss of $69 million, has sent Apple stock to an all-time low. Last week's news hasn't greatly affected the stock price, but "it's already in the toilet," Rhinelander said. Because of this uncertainty, the company needs to reassure core customers, analysts said.

"They can seal up the wound and start healing even though they've lost a lot of blood," Moser said. "But it's the slow trickle that can drain a company. There may not be a mentality conducive to turning the company around."

Sour earnings at Apple



*Projected Figures for 1996 include restructuring costs from January announcement

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23. Dir./Mgr. Sys. Development, Systems Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D Tech. Management
80. Sys. Integrators/VARs/Consulting Mgt.
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(d) Unix (h) Nix/Telnet
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F. 100 – 499	☐	☐
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50. Business Service (except DP)
65. Government State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
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Networking Products ☐ Yes ☐ No

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C. 5,000 – 9,999	☐	☐
D. 1,000 – 4,999	☐	☐
E. 500 – 999	☐	☐
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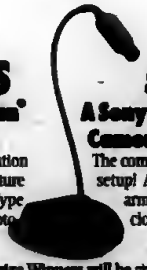

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Please pass along this issue of COMPUTERWORLD to an associate after you have finished playing the game.

This Week's TechnoTrivia Questions

1. Who is pictured on the original Apple Computer logo?
2. Which of the following is <u>not</u> the name of a computer language – AESOP, JOVIAL, PAIN or STRESS?
3. What was the price of the first home computer offered through a mail order catalog?
4. How old was the youngest beta tester for *Windows 95*?
5. China once executed an individual for committing what computer-related crime?

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[illegible]

Let Java cool

Sun CEO Scott McNealy concluded an entertaining speech at the Internet and Electronic Commerce Expo last week by recommending that corporate developers write all their application front ends in Java.

Now McNealy is one smart and funny guy, but I have to take exception to that idea. Rewriting applications in Java is the *last* thing corporate developers need to do right now.

Corporate IS has been whipsawed for years by changes to the technology landscape that promise bigger and better things if only you'll buy in to the latest trend. Remember computer-aided software engineering (CASE)? It was going to revolutionize development by letting you generate applications right from design specifications. CASE bombed because the tools basically didn't work, and corporate developers threw a lot of time and money down the drain.

Then came two-tier client/server. Fat clients and thin servers would put power in the hands of end users. Trouble was, fat clients acted, well, fat. Performance stopped a lot of applications dead in their tracks.

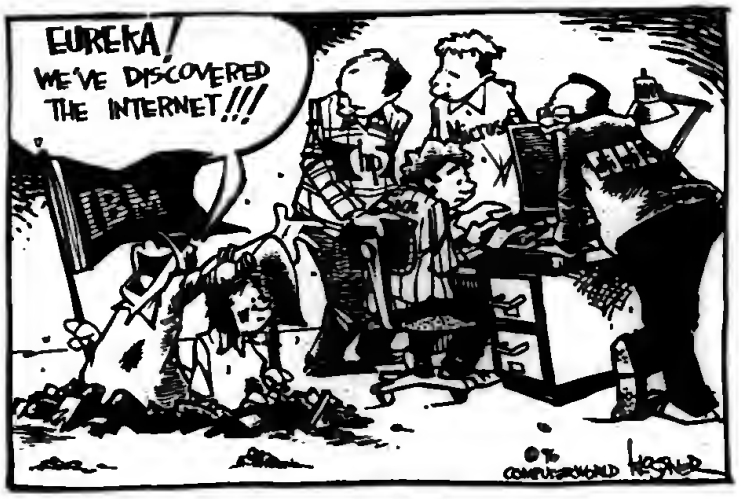
More recently, the Holy Grail has been three-tier client/server to relieve client congestion. We don't know how well that's going to work yet because everyone is too busy fussing over Java.

No computing discipline has been the subject of more failed paradigm shifts and broken promises than software development. Yet industry magazines still feature as many ads that tout improved programmer productivity as the *National Enquirer* has miracle diet plans. The simple fact is that writing good software is damnably hard, and no magic bullet exists.

I believe the initial euphoria over Java is over. Users are beginning to work with it and are finding that although Java is a remarkable technology, it's also complex, labor-intensive, slow and lacks a good aftermarket of programming tools. Not many Web browsers can handle it yet, and not many industries have compelling applications that require downloadable applets. And Java will soon be under pressure from good alternatives.

All this will shake out in time, and Java will be a significant development in the programming world. It may even be a — gulp — paradigm shift. But don't get too serious about it until a few of the pioneers have returned and had the arrows pulled from their backs.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*
http://www.ultranet.com/~pgillin



IS school survey focused on demand

I just got around to reading the Feb. 19 issue of *Computerworld* and noted a glaring irony in the article on IS schools ["IS Schools: Need improvement"]. It's too bad the folks who hacked the original version of Mosaic and (subsequently) populated Netscape went to Illinois/Urbana-Champaign, which shows up on the "fewest top skills offered" list. Presumably this leaves them ill-prepared for the brave new world of the Internet — the current state of which, in no small measure, derives from those efforts.

What's wrong with this picture?

William C. Mayse
McLean, Va.
chip@cambridge.com

Editor's note: The list of schools was not intended to be an assessment of overall quality, but rather a list of the programs offering training in the technology areas most in demand.

Idea likable, but execution lacking

Your recent feature ranking the industry's 25 top systems integrators shortchanged the companies listed and the clients they serve ["The good, the bad and the ugly," CW, Feb. 26].

Lumping together companies such as SHL Systemhouse and EDS with largely product-oriented companies such as Vanstar and MicroAge rendered the survey results useless. Additionally, many of the survey's 12 questioos were worded in a way that handicapped companies such as SHL that specialize in outsourcing and client/server migration.

One case in point: A question that prompted respondents on the types of services they received from integrators offered choices such as system design, application development and, incredibly, installation and user support. We don't know of many computer services firms that fail to offer installation. Far fewer offer client/server outsourcing, and *Computerworld*'s survey worked against those that do because it did not offer such services as a choice for respondents.

The idea of a Top 25 ranking was sound. Unfortunately, your execution of the process was lacking.

Greg Jacobsen
Executive vice president of business strategy and marketing
SHL Systemhouse, Inc.
Englewood, Colo.
gjacobsen@shl.com

Hey, don't forget good old OS/2

There is an error in your table "Stacking up" on the Intel line with the x86 chips ["IBM cans OS/2 on PowerPC; platform seen as threatened," CW, Feb. 26]. You listed only DOS, Windows and Windows NT in the field of operating systems supported.

Need I remind you that OS/2 is still an extremely viable operating system for this platform? IBM may have canceled it for the PowerPC, but it's the best thing going for the Intel processors.

Scott Tietjen
West Haven, Conn.

Do the NT math

I was amazed to read in your article that Windows NT sold only 368,000 server units and 698,000 desktop units ["Unix, OS/2 hold their ground against NT," CW, Feb. 26].

Based on the wording in your article, Windows NT is not really gaining any ground compared with the awesome sales of Unix and OS/2. However, if you had included the Windows NT numbers in your graph, you would see that:

- Windows NT Server outsold every vendor of Unix and OS/2 servers and almost outsold all Unix vendors combined.
- Windows NT desktop outsold every Unix vendor in the desktop arena.
- Windows NT desktop volume was over half of all Unix vendors combined.

Comparing the data graphically provides a better picture of the stunning numbers detailed in your article: the 218% and 156% growth rates for NT. If NT continues on this roll, do the math.

Russ McClelland
Pavel Systems Corp.
Irving, Texas
russmc@compuserve.com

■ Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Paul Gillin, Editor, Computerworld, P.O. Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Verbatim

From a speech by Douglas Adams, author of The Hitchhiker's Guide to the Galaxy, in which he traces the evolution of computing:

First we thought the PC was a calculator. Then we found out how to turn numbers into letters with ASCII — and we thought it was a typewriter. Then we discovered graphics, and we thought it was a television. With the World Wide Web, we've realized it's a brochure.

From a statement by Doug Cayne, analyst at Gartner Group, Inc. in Stamford, Conn.:

Because Internet technologies, products and markets are changing so rapidly, no near-term products can be considered strategic choices. We recommend tactical experimentation by users who must be prepared to churn their Internet technology base several times in the next few years.

Netscape's delivery of the first Java-enabled servers is an excellent opportunity for users to gain experience with a key technology.

From a statement by Karl Duffy, telecommunications analyst at Killen & Associates in Palo Alto, Calif., on AT&T's spin-off of Lucent Technologies, Inc., its huge telecommunications equipment business:

Competitors such as Alcatel, Ericsson, General Instrument, Motorola, NEC, Northern Telecom and Siemens now face a much more formidable opponent in Lucent Technologies. Free from the AT&T bureaucracy, Lucent Technologies will move quickly to take business away from competitors.

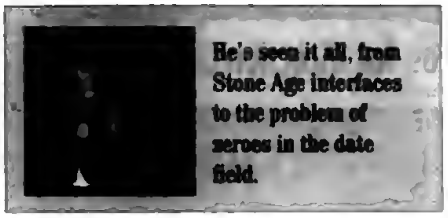
AT&T [telecommunications] service competitors [were] increasingly reluctant to buy AT&T equipment. Lucent's newfound independence dispels this conflict of interest.

[In addition,] thousands of suppliers of the former AT&T Network Systems line of business are now at risk. Lucent has new management, direction and needs.

The 2,000-year-old IS manager

Allan E. Alter

CW: Ladies and gentlemen, we have some remarkable news. Scientists have found a 2,000-year-old man who claims to be the world's oldest IS manager. We have brought him to *Computerworld*'s editorial offices for an interview. Sir? Sir?
Man: Huh? What is it? You from IBM?



CW: No.
Man: Too bad. I'm waiting for customer service to call me about a vacuum tube.

CW: Sir, when did you first become an information systems manager?
Man: It was — wait a minute — it was 2,107 years ago last Tuesday.

CW: That's remarkable! Computers weren't even invented then.
Man: Of course we had computers. They were just chiseled from rock. Talk about carpal tunnel syndrome! But they were very user-friendly. We even had lots of graphic user interfaces.

CW: You mean graphic*al* user interfaces?
Man: No, *graphic* user interfaces. Users would walk up to the computer and yell, "Look, you stupid machine, I need a word processed, you rotten #&$^%#%@#$!!" Oh, it was graphic, all right. Users loved it. Relieved stress.

CW: Sir, there's a question on the minds of many IS managers today....
Man: Go ahead, ask. I was a consultant once. I'll tell you what I know whether I know it or not.

CW: IS managers today are worried about the year 2000. Systems may crash when the date field turns from 99 to 00. Could you shed some light on how you dealt with the problem?
Man: Hoo, boy, that's a toughie. I remember when I got my first job, right out of MIT....

CW: You mean the Massachusetts Institute of Technology?
Man: No, the Mesopotamia Institute of Technology. Anyway, this angel appears and tells us great tidings of joy and now it's year zero and we gotta throw out our calendars. Was that a pain in the neck!

CW: I can imagine the inconvenience.
Man: No, I mean it was a pain in the neck. You ever try to throw out a calendar chiseled in stone? We could see this year zero stuff was a big, big problem.

CW: Why?
Man: Who ever heard of a zero? We knew I's and II's and V's and X's, but we had never, ever seen a zero. What's a zero? Nothing, right? How do you compute nothing and get any productivity from your IS department? Try explaining that to your chief financial officer.

CW: What did you do?
Man: Well, we brought in a consultant from Peat Bogwick. She said we had just one choice: We had to convert our files. So we picked up all our I's and V's and X's — boy, were they heavy — and threw them over a cliff. When the IS auditors got to the bottom, guess what they found? They'd all been converted to nothing, just in time for year zero! Problem solved.

CW: Sir, I mean no disrespect, but I'm not sure that's a workable solution today.
Man: What's the matter? You never heard of reengineering?

Alter, a *Computerworld* senior editor, Managing, still has a weakness for old Mel Brooks/Carl Reiner routines. He wishes everyone a happy April Fools' Day.

RFPs: May they rest in peace

Michael Schrage

A painfully honest IS manager recently described the abysmally confused and inchoate request for proposals (RFP) her company released for a major systems project.

As she described it, the RFP was less a carefully designed requirements wish list than a desperate cry for help.

Even more pathetic than the RFP itself was the cockeyed responses it inspired from some of the biggest systems integrators in the business. Instead of using this disaster of an RFP as a diagnostic tool to help discern the real problems/opportunities, a couple of the integrators were prepared to bid on a contract that the client itself knew made no sense. And we wonder why projects are overdue and overbudget?

Unfortunately, RFP vignettes from hell such as these have the odor of familiarity. I don't think there has been any serious study to test whether there is a positive correlation between well-crafted RFPs and successful systems deployments.

However, it's likely that a nontrivial percentage of RFPs aren't worth the time and effort it took to draft them. At least one blue-chip systems integrator prefers not to deal with companies that issue RFPs. The integrator's experience indicates that RFPs complicate more than they clarify. The practical headaches outweigh the purported benefits.

Of course, it's not supposed to be that way. Theoretically, an RFP should be a terrific mechanism to focus the organization on what it really wants from a system. The self-discipline of gathering and listing requirements to get a contractor to understand priorities should boost the odds for a successful engagement. So what's the problem?

Round up the usual systems cliches. Most organizations don't know what they want built. If they really knew, they wouldn't need an RFP. No, what happens is that the RFP becomes a journey of self-discovery — a form of "MISanthropic" therapy where the systems organization can pretend it's listening while its clients can pretend they're giving serious thought to their requirements.

In reality, the problems with RFPs are the same as any requirements-driven development process. Far too much time is spent defining requirements. Far too little time is spent using prototypes and mock-ups to flush out how people really intend to use the systems they describe. Writing an RFP is more like filling out an application for a computer dating service than a vehicle for useful introspection. Besides, only the most general requirements survive the first upgrade of a newly deployed application.

The RFP is a sorry, anachronistic relic that persists more as a function of government practice and organizational inertia than any demonstrable value over time. Most organizations would be far better off scrapping their traditional RFP process and having the brains to do a quick-and-dirty prototype of their own and use that as the basis for inviting in the integrators.

Or, how about benchmarking against comparable systems that actually run in other organizations and using them as models?

Unfortunately, what we have today are IS people acting as pseudojournalists who seem more intent on describing functionality than building it. That is a recipe — excuse me, an RFP — for disaster.

Schrage is a research associate at the MIT Media Lab and author of *No More Teams!* His Internet address is schrage@media.mit.edu.

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New spec may simplify remote management of PCs, 41

Servers & PCs

Users ask: What for art thou, Multia?

By Jaikumar Vijayan

It's a PC. It's a workstation. It's an X Window System terminal. It's ... Multia.

Sixteen months after it was launched, Digital Equipment Corp.'a highly acclaimed Multia multiclient platform remains a rather confusing product in search of a volume market.

Digital last week conceded that sales of Alpha-based versions of Multia were below expectations. The company released an Intel Corp. lineup last November.

But the company claimed it recently began picking up substantial orders, primarily for the Intel line, from major corporations worldwide.

Kudos from users

Several Multia users, analysts and distributors interviewed by *Computerworld* last week gave the product high marks for its leading-edge technology.

"Digital has an outstanding product in the Multia. What they need to do is package and market it better," said Rick Dakin, president of Beacon Technologies, a reseller in Longmont, Colo.

"It's a great concept, but a lot of people are having trouble understanding what it is all about," agreed Steve Kleynhans, an analyst at Meta Group, Inc. in Caledon, Ontario.

Launched by Digital in November 1994, Multia is a unique hybrid client platform that combines the hardware and software features of a standard PC, a Windows NT workstation and an X terminal.

With Multia, systems administrators and users can access Windows, Windows NT, Unix, host-based and X terminal applications across the network from a single client device (see chart). This kind of highly integrated, single-platform client is supposed to simplify systems administration, reduce costs and dramatically improve connectivity within an enterprise network.

At about $4,000, Multias typically cost $500 to $800 more than high-end PCs.

"Some people are astounded at the combination of functionality that is available in this one product. Others find it a challenging concept to understand simply because there is no comparable

Multia, *page 41*

Briefs

Acorn gathers up NewsPad

Acorn Computer Group, the U.K. company that is developing the Network Computer specification for Oracle Corp., plans to launch the Acorn NewsPad, a tablet computer, by year's end. Acorn officials said the NewsPad will have a touch-sensitive screen, an on-screen keyboard for data input and special versions of common applications. Pricing wasn't available.

Dell pulls out notebook

Dell Computer Corp. has joined the long list of vendors who are releasing notebooks to support Intel Corp.'s 133-MHz processor. The Latitude XPI notebook has 8M bytes of RAM, a 540M-byte hard disk drive, an 11.3-in. Super VGA active-matrix screen and a lithium ion battery. It costs $3,999.

Sony will plunge ahead

Undaunted by the slowdown in the U.S. PC market, Sony Corp. will enter it by this September. Sony officials said they didn't want to react to short-term fluctuations in the market. The company will start with two PCs and gradually expand their capabilities.

Sagister hits the market

Bull Information Systems Ltd., the state-owned French computer company, launched Sagister, a mainframe computer that runs IBM's AIX Unix operating system. It runs enterprisewide business applications. The entry-level configuration costs $712,500.

SHOPPING FOR A 17" MONITOR? ENJOY THESE FABULOUS SAVINGS.

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447Xi	150Hz	140Hz	110Hz	100Hz	85Hz	72Hz

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AD-CP

Spec offers better support for remote PC management

By Bob Francis

Vendors are beginning to close ranks around a Desktop Management Task Force standard that will help network managers support their far-flung PC users.

Compaq Computer Corp. will integrate the Desktop Management Task Force (DMTF) remote management specification into its desktop and server management utilities. It will eventually replace its own specification, company officials said last week.

Product completed

Compaq set up its own desktop specification, called Intelligent Manageability, last year.

That is because the DMTF's first offering lacked support for remote management, a key need for Compaq's corporate customers, Compaq officials said.

Now that the DMTF has finished its next-generation Desktop Management Interface (DMI) and gotten support from the major operating systems vendors, Compaq will phase in the new specification.

New features

Desktop Management Interface 2.0 features remote desktop management and support major operating systems from Microsoft, IBM, Novell, Inc., Sun Microsystems, Inc. and SCO, Inc.

With DMI 2.0, corporate network managers could use a network utility package such as Symantec Corp.'s Norton Administrator Suite to gather information on disk drives, software and other components from networked and remote PCs.

Paul Ruben, group product manager for systems management at Compaq, said the company will add manageability features that exceed the DMI spec.

Users should see more benefit from a remote management specification than from the previous incarnation of DMI, said Joseph Ferlazzo, an analyst at Technology Business Research, Inc. in Hampton, N.H.

"This will eventually allow network managers to remotely support desktop users. It's become a necessity in the business world," he said.

Vendor cooperation

Support from operating systems vendors for the DMI specification had previously been weak, but recently all the major desktop vendors pledged to add DMI support in upcoming versions of their operating systems.

Microsoft Corp. will add DMI 1.1 support to Windows 95 in July and the new specification, DMI 2.0, at a later date.

Microsoft will also add DMI support in Windows NT, said Michael Emanuel, product manager in the systems management group at Microsoft.

Shifting sands

Midrange vendors' competition during the next six months

Vendor	Position	Comment
AT&T GIS	=	Releasing strong new products; facing company uncertainty
Compaq	+	Getting into small-scale markets
Data General	=	Transitioning to Intel-based servers
Digital	+	Strong Unix market and rapid high-end growth
Hewlett-Packard	+	Strong Unix and MPE markets
IBM	–	RS/6000 SMP needs boosting; product strategies are causing problems
Motorola	–	Unproven system strategies
Sequent	=	Strong sales; products improving steadily
Silicon Graphics	=	Rapid server growth
Sun	=	UltraSPARC servers will make an impact
Tandem	=	Fight with high-availability systems will intensify
Unisys	–	Strong integration strategy but hardware lags

+ Market advantage – Market disadvantage = Market neutrality

Source: International Data Corp., Framingham, Mass.

Multia system confuses users

CONTINUED FROM PAGE 39

product to pigeonhole it with," said Denny Lane, director of strategic alliances at Digital.

"It's kind of like a binary equation — either the light goes on and the user says, 'I get it. I know what the product is about,' or it doesn't go on at all," he said.

Multiclient platforms

Easy to use

"The product is very easy to work with and very flexible," said Jeff Downs, senior project leader at IDX Systems Corp. in Burlington, Vt.

IDX manufactures clinical imaging systems and has used Alpha-based Multia systems to let users access X terminal-based viewing applications.

But IDX is porting the same applications on to the Internet, which means users soon can access them by using any hardware platform that has a browser.

As a result, IDX is unlikely to purchase any more Multias, Downs said.

"I like the concept that the application and the environment can be configured in a centralized location," said a user at a major bank in Pittsburgh. But there are some minor issues related to applications that run under Windows NT that need to be worked out, said the user, who requested anonymity and wouldn't identify the issues.

Digital isn't releasing sales figures for the Multia, but company officials said its installation base has been rapidly widening since its launch of the Intel-based systems.

Among the corporations that Digital lists as Multia customers are Citgo Corp., US West, Inc., AlliedSignal, Inc., NASA's White Sands Test Facility and Bell Canada.

New Products

FWB, Inc. has introduced HSM ToolKit, a hierarchical storage management package for the Macintosh.

According to the Menlo Park, Calif., company, HSM ToolKit was designed to extend the capacity of hard disk drives by migrating unused files to secondary storage.

HSM ToolKit leaves an alias file as a pointer, so archived files can be retrieved transparently.

HSM ToolKit identifies files for migration by tracking when files have been accessed, not just modified.

Users can configure which files are migrated by age or type.

HSM ToolKit works with Apple Computer, Inc. AppleShare networks and supports any Finder-mountable storage device.

HSM ToolKit costs $79.

▶ *FWB*
(415) 325-4392

Sony Electronics, Inc. has introduced DKC-1D1, a digital camera that lets users supply high-quality images to PCs.

According to the San Jose, Calif., company, the camera can store up to 140 images on a 10M-byte PCMCIA card by using JPEG compression. It weighs 26 ounces.

The DKC-1D1 also can connect directly to a PC through a built-in SCSI interface.

The DKC-1D1 has a built-in flash and a macro zoom lens that magnifies 12 times its normal size. It lets users select manual or automatic focus and shutter speed.

The DKC-1D1 can archive images to Sony's portable minidisc data drive, which can store up to 1,000 digital images on one minidisc.

Pricing starts at $1,999.

▶ *Sony Electronics*
(408) 432-0190

Compuware Corp. has announced Conversion-Xpert software, which reformats and converts data among more than 60 file formats.

According to the Farmington Hills, Mich., company, Conversion-Xpert was designed for sites that move data between mainframe and client/server systems.

Pricing starts at $15,000.

▶ *Compuware*
(313) 737-7300

QMS, Inc. has rolled out the 2425 Print System, a production-level printer.

According to the Mobile, Ala., company, 2425 Print System is a 24 page/min. workgroup printer.

It offers printer-based page layout options, including booklet printing, thumbnail, duplexing, stapling and production-level document finishing. It has a 64-bit processor and controller software.

The 2425 Print System features 1,200- by 1,200 dot/in. printing, accommodates up to 128M bytes of RAM and includes an Ethernet network interface. This interface supports connections to Macintosh, PC and Unix workstations.

The 2425 Print System includes support for Novell, Inc. NetWare IPX/SPX, IBM OS/2 LAN Manager/LANServer and Windows 3.1, Windows 95 and Windows NT.

Pricing for the 2425 Print System Starts at $5,499.

▶ *QMS*
(334) 633-4300

Product shorts

Software Partners/32, Inc. has rolled out StorageCenter, a storage management suite for Unix. It includes four integrated applications: Backup and Restore, Media Management, Archiving and Administration. It is available in Enterprise, Workgroup and Personal versions and supports Sun Microsystems, Inc. Solaris, Hewlett-Packard Co.'s HP-UX, IBM's AIX and Digital Equipment Corp.'s Unix. Pricing starts at $1,875. Software Partners/32, Topsfield, Mass. (508) 877-6409. ... **Kingston Technology Corp.** has announced 64M-byte and 256M-byte memory kits for Silicon Graphics, Inc. (SGI) Unix workstations. The memory kits work with SGI's R10000 system hardware, software and diagnostics. The 64M-byte memory kit costs $4,770, and the 256M-byte memory kit costs $17,465. Kingston Technology, Fountain Valley, Calif. (714) 435-2600.

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New tools help developers move to object-oriented design, 52

Software

Novell puts voice into the in-box

By Tim Ouellette

Novell, Inc. will begin dialing for users this spring by upgrading the telephony features in GroupWise.

The goal is to have the GroupWise messaging software treat voice messages as any other data type in its universal in-box, which would give users one place to go for all their communications.

"The issue of actually having a way of integrating voice and electronic mail is really critical," said Ivan Handler, a GroupWise consultant and user in Chicago. "It is not uncommon to see people with two or three separate Rolodexes, while soon they could have just one database for all contacts and could dial the phone from GroupWise."

Integrated communications

According to the plans Novell previewed at the recent Brainshare '96 in Salt Lake City, users will be able to listen to and forward voice messages; manage voice messages together with related electronic messages, documents and calendar tasks in GroupWise folders; and apply sorting and routing rules to the voice messages.

"The reason why we got into this is that we were looking downstream and realized that [voice and electronic] messaging is coming together," said Jae Pudewell, a GroupWise product line manager at Novell.

Novell currently offers Telephone Access Server (TAS), an add-on to GroupWise 4.1 that gives users access to E-mail and calendar information from a telephone outside the office. But by May, the Provo, Utah, firm will ship GroupWise Phone Access, which adds GroupWise client control of voice messages and the telephone itself.

Novell's messaging upgrade to GroupWise 4.x, called GroupWise XTD, will also incorporate the Phone Access features when it ships this summer.

Lotus Development Corp. provides similar groupware features with Phone Notes, a Notes add-on that lets users access their Notes databases and messages from a Touch-Tone telephone.

There are still hurdles to face such as price and proprietary telecommunications hardware.

Phone Access will incorporate the features of the TAS product, so prices, which haven't been announced, will likely go above the server's $9,995.

Intranet applets

D&B Software uses Java to target internal client/server browsers

By Julia King

Dun & Bradstreet Software last week one-upped its client/server competitors by announcing a series of enterprise software applets designed for use over corporate intranets.

So far, plenty of vendors have furnished World Wide Web browser access to applications. But D&B Software is among the first to extend functionality to the ever-expanding universe of intranet users.

The vendor's Requisitions applet, part of the SmartStream Web Series, will ship in May. The Java-based applet, developed in conjunction with Sun Microsystems, Inc., lets users execute a purchase request through a SmartStream system without having SmartStream client software on the desktop.

With D&B Software's Requisitions *applet, users don't need the full SmartStream software package for purchase requests*

Another option

"It makes sense for managers to do purchase requisitions electronically, but you wouldn't deploy client software to every manager just to do that," said Jeff Scherb, chief technology manager at D&B Software.

"With a browser-based application, it's much easier and cheaper to extend access to casual users. You're not installing 50M or 100M bytes of software code on every client workstation," he explained.

Instead, the D&B Software applet resides on a server and can be downloaded on an as-needed basis by browser software, which is becoming ubiquitous at many large companies.

This year, 35.8 million corporate PCs will have browser access to Internet or intranet resources, according to International Data Corp. in Framingham, Mass.

Houghton Mifflin Co., a $700 million publishing company and user of D&B Software's SmartStream, could save about $1,000 on each desktop that uses a browser instead of traditional SmartStream client software.

"It would be a significant savings. With a browser, you also wouldn't need the disk space and RAM that the client software requires," said Daire Starr, a financial systems project manager at Houghton Mifflin in Boston.

As a result, "we'd definitely like to use [the new applet] for casual users who do not need a complete SmartStream application on their PCs," Starr said.

Also last week, D&B Software announced a second application, SmartStream Assistant. It lets users access the vendor's help desk via the Internet. Customers who use the application can work interactively with D&B Software support personnel to solve software problems and download fixes. Previously, users tapped in to the company's help desk via dial-up modem lines.

D&B Software in January announced another Internet-related product, SmartStream Decision Support. Using this tool, a pricing report, for example, can be quickly generated and uploaded to an intranet-based Web page for viewing by remote salespeople around the world.

Applications in the SmartStream Web Series will cost about $50 per client.

Import/export blues hit users

Review

By Esther Schindler

In the real world, people don't necessarily use the same applications as their co-workers. But we all need to exchange data with one another: The development department writes documentation in WordPerfect, but marketing uses Microsoft Word and yet another department may use an OS/2-based program.

To get around this, every popular word processor claims to import and export data in other formats. But after putting feature sets from several rival applications under a microscope, I learned that you might not be happy with the results.

This article won't recommend which word processor to buy — you've already done that. The goal here is to help you live better with the one you already own.

I created documents by using the latest versions of several popular word processors: Microsoft Corp.'s Word

Import/export, *page 50*

Norton Tools tackles Windows NT

Early users like file management, diagnostic tools in graphical format

By Lisa Picarille

Symantec Corp. this week is expected to take the wraps off the Windows NT version of its Norton Tools family of software utilities. Like the version for Microsoft Corp.'s Windows 95, the NT version of Norton Tools offers antivirus protection, file management and the ability to monitor key system resources of the operating system — in this case, Microsoft's Windows NT.

Users said Norton NT Tools offers a more robust tool set compared with what is built into NT. Microsoft built in to Windows 95 many of the same features that are in the Windows 95 version of Norton Tools.

"NT's diagnostic tools are buried. They are harder to find and harder to manipulate," said Richard Favara, president of The Expedition Group Ltd., a North Hills, Calif., network and systems integrator that beta-tested Norton NT Tools and NT 4.0. Conversely, "Symantec puts them right up on the screen and makes them easy to use," he said.

Utilities

Norton NT Tools includes Norton Antivirus, which can detect and eliminate viruses. Because Windows NT is often used as a file server, NT Tools also detects and removes viruses that can infect client PCs that run DOS, Windows 3.x, Windows 95 and NT.

Drag to the 'net

The $49.95 product also offers new file management facilities that enable users to browse unmapped network resources, compress and decompress files and format and copy floppy disks. It also lets users drag and drop information to and from file transfer protocol (FTP) Internet sites directly from within Norton File Manager, perform file and application searches, configure systems and synchronize folders.

Early users of Norton NT Tools lauded the file management features.

"In Windows 95, file manager is a real basic-bones feature, but Norton NT Tools allows you to have several different views and lets you do a host of functions including zip and unzip files," Favara said. "You can also get an FTP site listed as if it were a drive. This is very much like what Microsoft's Network Neighborhood does."

Network Neighborhood is an icon on the Windows 95 desktop that lets users see and set up drives, peripherals and resources that are connected to their computers.

Call the doctor

Norton NT Tools includes Norton System Doctor for continuous monitoring of disk drives, memory, CPU and network performance. The program runs in the background and can be set up to notify users when the system reaches critical levels.

In addition, a System Information feature provides graphical representations of information about memory, disks, network connections and multimedia devices.

Beta-tester Jason Leznek, a business systems analyst at a large Midwest telemarketing firm, said System Information was particularly useful in helping users see where they are having systems problems.

"You get a graphical picture of everything on your system," Leznek said. "Before, you would tell your users that they shouldn't have games on the system, but now you can show them why.

"You can go to their machine and say, 'Look, you have a 2G-byte drive with only 500M bytes of free RAM and 60% of what is free are games.' When you can show that to people instantly in the form of a pie chart, it's a much more powerful explanation."

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New Products

Integralis, Inc. has introduced MimeSweeper 2.1 for Windows NT, an antivirus product.

According to the Kirkland, Wash., company, MimeSweeper 2.1 helps administrators prevent viruses from entering their networks from the Internet and external electronic-mail services. It behaves like a Microsoft Mail E-mail router that decodes incoming mail and scans all internal mail traffic between Microsoft Mail post offices for viruses. If it finds undesirable files, it quarantines the message and notifies the network administrator.

MimeSweeper 2.1 for NT scans both incoming and outgoing E-mail and supports most virus scanning products.

Pricing for MimeSweeper 2.1 for NT starts at $999 for 25 users.

▶ *Integralis*
(206) 889-4724

Linguistic Technology Corp. has introduced English Wizard 2.0, PC software that translates plain English into SQL.

According to the Acton, Mass., company, the software lets users translate questions with percentages, "both/and" questions, "but not" questions and questions containing the word "exclusively." For example, a user can translate the question "What percentage of customers buy both produce and fish each time they shop?" into SQL.

English Wizard 2.0 enables any Open Database Connectivity-compliant reporting tool. It costs $99.

▶ *Linguistic Technology*
(508) 266-1818

Precise Software Solutions, Inc. has announced Inspect/SQL and Analyze/SQL, two administrative packages for Oracle Corp. sites.

According to the Braintree, Mass., company, Inspect/SQL lets database administrators and application developers diagnose Oracle performance problems graphically. Analyze/SQL lets users improve system performance by modeling SQL statements to see how they will perform, without actually running them.

Pricing depends on the platform. Inspect/SQL starts at $5,000; Analyze/SQL starts at $5,500.

▶ *Precise Software Solutions*
(617) 380-3300

Three D Graphics, Inc. has announced Compadre, a support product for Microsoft Corp.'s PowerPoint for Windows 95.

According to the Los Angeles company, Compadre is an assortment of images on CD-ROM that lets users enhance PowerPoint presentations. It features a textured fill option, 35 music clips, more than 90 sound effects, presentation design templates, video clips and multimedia buttons.

Compadre also has a Windows 95 Setup Wizard that creates shortcuts to all the CD elements in convenient places within a PowerPoint folder.

Compadre costs $50. A demo version can be downloaded from http://www.threed-graphics.com/compadre.

▶ *Three D Graphics*
(310) 459-7949

Vantive Corp. has announced Vantive Enterprise 5.0, an enterprise client/server customer interaction product.

According to the Mountain View, Calif., company, Vantive Enterprise 5.0 includes enhancements that streamline Internet access to a company's customer support operation. It features a field service application that tracks both parts and personnel involved in support calls.

The new Vantive applications support Informix, Inc. databases. Pricing starts at $30,000 per application server and $2,500 per concurrent user.

▶ *Vantive*
(415) 691-1500

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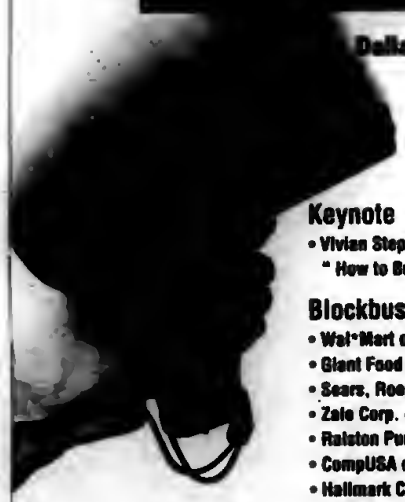

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- Vivian Stephenson, SVP & CIO, Dayton Hudson Corporation
  "How to Build Core Competency Into Business Systems"

Blockbuster Sessions
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- Giant Food on Online Analytical Processing
- Sears, Roebuck & Co. on Very Large Data Warehousing
- Zale Corp. on Commercial Client/Server Systems
- Ralston Purina on Efficient Replenishment
- CompUSA on World Wide Web
- Hallmark Cards on Store-level Decision-making
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- The Gap on Retooling for Client/Server

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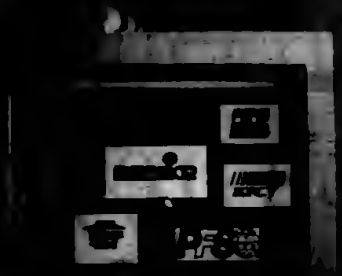

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Import/export

CONTINUED FROM PAGE 45

7.0 for Windows 95, Lotus Development Corp.'s WordPro for Windows, Corel Corp.'s WordPerfect 6.1 for Windows (with some testing of the DOS version) and DeScribe, Inc.'s DeScribe Enterprise Edition for OS/2. The Windows 3.x packages were tested in WinOS2 under OS/2 Warp Connect. All packages were installed with "ordinary" options, with an eye toward including extra import/export filters. DeScribe, for instance, installs a subset of its filters only by default.

Test results

Each document was exported to the other document formats. In some cases, I also exported to the alleged Rosetta stone: Rich Text Format (RTF). I read each document, in each format, into every word processor and judged the results.

They all stink.

Any of the word processors can import a simple memo or letter. But as your documents become more complex, you will lose more of your work in the translation.

The following guidelines may steer you past some of the harsh realities of intermingling word processors:

- DeScribe is the only word processor that warns you that you might lose data. This may not make you feel better, but at least your eyes will be open.
- Word 7.0 won't import Lotus AmiPro or WordPro documents. You'll need to save them in another format. Don't use WordPerfect 6.1 as the intermediary format, though. Word 7.0 indicated that the WordPro document, which was saved in WordPerfect 6.1 format, was corrupt.
- If you want to watch your word processor crash or produce garbage, using WordPerfect 6.1 as the intermediary is a good way to do it. Word 7.0 reported an "illegal operation" when it tried to import a DeScribe document that had been saved as a WordPerfect 6.1 file. WordPro crashed regularly on documents saved in Word 7.0 formats. DeScribe handled errors with comparative grace, but it wasn't perfect, either.
- None of the other word processors read DeScribe's native format. DeScribe has more import and export filters than the other programs, but you will oeed to rely on them often.
- If you need to exchange data between WordPerfect 6.1 and Microsoft Word, let Word 7.0 import and export WordPerfect 6.1 files. It does a better job.
- WordPerfect 6.1's Windows and DOS versions exchange data quite well.
- For documents that will be exchanged often, eliminate secondary text frames. Use one base document frame. None of the word processors handled frames well; most lost the data completely.
- Expect to regenerate or reimport your graphics.
- Your equations are history. In testing, Word 7.0 did import a WordPro equation, but it turned into a different equation.
- Accept that your carefully chosen fonts and layouts will need to be carefully chosen again.
- Word 7.0 doesn't make it easy to save in earlier Word formats such as Word 5.0. Actually, I'm not sure if it's possible.
- Most of the word processors include superfluous data when they export files. You will find extra tabs, line formatting and other information in the documents you examine, and you may have to clean them out.

Word processors

Four files were used in the tests. The following is a typical case:

File 1 was a complex newsletter created in WordPerfect 6.1 for Windows. The file contained a .wpg graphic, a secondary frame (generated table of contents), colored text, stylesheet, end note and equation. It also contained a table of numbers with joined cells at the top and a gray background.

DeScribe importing:

- Word 7.0 format. Lost graphics, secondary frames and most styles. Kept most text formatting. Lost the equation.
- AmiPro format. Kept the equation as a text description. Lost joined cells in table, but kept data. Lost graphics and secondary frames. Stylesheet remained intact.
- WordPerfect 6.1 format. Graphics wouldn't import, but most text came in. Stylesheet remained intact, but secoodary frame was gone. Lost the equation.

WordPro importing:

- AmiPro. Got 77 pages of page headers — that's all.
- WordPerfect 6.1. Ran into General Protectioo Fault (GPF) every time.
- Word 7.0 for Windows. Got most of the text in one import. Met with GPF every other time.

Word 7.0 for Windows 95 importing:

- AmiPro. Didn't recognize this format.
- Word for Windows. Brought in first article. Lost graphics and secondary frame. Lost stylesheet. Imported table data, but lost the joined cells. Lost the equation.
- WordPerfect 6.1. Loaded graphics, colored text, table and its background. Lost second article. Layout seemed reorganized. Lost the equation.

Schindler is a writer and reviewer at The Groovy Corp. in Scottsdale, Ariz.

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David Wright

It's RAD, man: Getting software out on time

Rapid application development (RAD) is a buzzword for a set of techniques used to deploy software within compressed time frames.

Instead of the software "popping out" at the end of its development cycle, the software evolves around a core set of deliverables that are deployed in chunks in order of importance.

The short time frame contributes to an atmosphere of trust and a more solid business relationship with the customer. In order to make this happen, however, you need to implement a number of techniques.

The software delivery date agreed on with the customer should be set in stone and considered a "drop dead" date for all involved.

This will force the development team and client to focus on what's really important and resist the tendency to embellish the product as it evolves.

Timeboxing also forces tradeoffs and compromises, which are necessary with any fast-moving project.

Within this timebox, a repeating cycle of design, construction and testing are completed with the customer, with each succeeding cycle bringing the product closer to its final form.

Don't worry if at first RAD feels kind of chaotic. It should feel chaotic because it is. . . . However, you'll discover that RAD is really not any more chaotic than the normal hectic pace you're used to.

Ready to commit

The customer should be heavily involved in detecting design flaws early on. Because this won't happen by itself, you must secure the commitment of the customer's decision-makers to a minimum number of hours for testing and refining the product. You must be careful on this point because customers often agree to almost anything to get you to start coding. So when negotiating these commitments, you must determine whether the client can meet them. Schedule regular meetings with the client in advance solely for these purposes.

The number of client members on your team should also be relatively small to minimize the time needed to make quick decisions. Make sure they possess an appropriate mix of experience and knowledge that fully represents the client's requirement.

The software project manager also must be able to take calculated risks because there often isn't time to make fully informed decisions. This is where the experience of the project manager and the quality of the team come into play. Soliciting input and making a final decision, if a decision hasn't been discussed during team analysis and debate, is critical.

Because RAD can be misunderstood and abused as a shortcut to deploying software, you should take pains to follow a development methodology using proven software engineering principles. Business emergencies that translate into RAD projects often lack the rigor needed to deliver a quality product. RAD is not an excuse for hacking out products helter-skelter.

Also, don't let the scope of the project increase without negotiating a new delivery date that is realistic.

Last, don't worry if at first RAD feels kind of chaotic. It should feel chaotic because it is. After you've evolved a tight-knit development team and hit paydirt, however, you'll discover that RAD is really not any more chaotic than the normal hectic pace you're used to. It is a different type of apparent disorder that produces quality software and better customer relations. A little planning with rigorous enforcement of these principles will help make RAD standard repertoire in your organization.

Wright is data administrator at the Christian Broadcasting Network in Virginia Beach, Va. His E-mail address is david.wright@cbn.org

Tools ease migration to object-based design

By Frank Hayes

How do you get from conventional software development to object-oriented design? That's the problem facing an increasing number of corporate information systems shops as they begin serious client/server development.

Large IS shops traditionally have used programming languages such as Cobol and PL/1, along with modeling techniques such as entity-relationship diagrams, for database design. But in the future, many developers say they will also need object-oriented capabilities to create complex client/server applications.

"We realize objects can't do everything, but they're going to do an awful lot, eventually," said Douglas Stone, a computer scientist at Northeast Utilities, Inc. in Berlin, Conn. "We're looking for tools that will bridge that gap."

Easy does it

To help developers ease into object-oriented analysis and design, vendors such as Sterling Software, Inc. and Bachman Information Systems, Inc. are merging traditional business modeling capabilities into object-oriented development tools.

Atlanta-based Sterling last week began shipping Key:Workgroup 1.5. The new version of the object-oriented tool set, which starts at $25,000 for four developers, adds entity-relationship, workflow and dataflow diagraming.

Bachman in Burlington, Mass., which made its name with database design and construction tools such as DBA, is merging with object-oriented design vendor Cadre Technologies, Inc. in Providence, R.I. The combined company, known as Cayenne Software, plans to offer a more IS-oriented version of Cadre's ObjectTeam analysis and design tool set. ObjectTeam Enterprise, which will cost $4,890 per developer, is slated to ship by June.

Tools triumph

Average number of model-driven design tools used for client/server development

Base: 309 Fortune 1,000 client/server IS managers

*Projected

Source: Sentry Market Research, Inc., Westboro, Mass.

The shift to an object-oriented approach for business development is long overdue, said David Sharon, president of CASE Associates, Inc. in Clackamas, Ore. "It's a natural evolution, but many IS professionals have been deeply rooted in their on-the-job experiences" with traditional development, he said.

Indeed, many IS shops are concerned that their staffs won't be able to make the transition to object-oriented development and tools.

"People are telling us that 50% of the Cobol programmers in the world will not make the paradigm shift," said William Lamb, a senior analyst at Rochester Gas & Electric Co. in Rochester, N.Y. "That's not the tool I'm looking for if 50% of the programmers around here are going to be rendered useless."

That's why tool sets that can help developers make the transition are crucial, Stone said. "We need something that will let us work up to that, so we can do entity-relationship diagrams in the right place and build object models in the right place. We have to move over in a coordinated fashion," he said.

Briefs

Kit controls output

Developers of client/server applications can add output management features with help from Dazel Corp. in Austin, Texas. A tool kit helps integrate the ability to access and control output resources such as printers, faxes, electronic mail and paging services. Dazel's server and client interface software lets users send data such as a memo to multiple destinations throughout a network. Dazel supports development with languages such as C and C++, tools such as Powersoft Corp.'s PowerBuilder and production client/server applications from vendors such as Hyperion Software Corp., Oracle Corp., PeopleSoft, Inc. and SAP AG. A developer's license costs $600 for Unix and $200 for Windows.

Versant forms alliance

Versant Object Technology, Inc. in Menlo Park, Calif., said it has assembled an alliance to create a business-transaction infrastructure for the World Wide Web. The alliance, which will focus on new Web-based applications and retrofitting legacy applications, includes Smalltalk vendor ParcPlace-Digitalk, Inc. in Sunnyvale, Calif.; design firm Art Technology Group, Inc. in Boston; data management vendor BMC Software, Inc. in Houston; text search vendor HNC Software, Inc. in San Diego; object communication vendors Iona Technologies Ltd. in Westboro, Mass., Expersoft Corp. in San Diego and Post-Modern Computing Technologies, Inc. in Mountain View, Calif.; object relational database vendor Ontos, Inc. in Lowell, Mass.; and C++ library vendors Rogue Wave Software, Inc. in Corvallis, Ore., and Ilog, Inc. in Mountain View, Calif.

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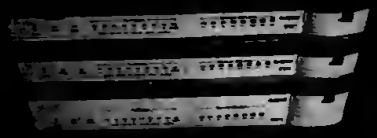

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Wireless LAN market growing, 59

Keeping the bandwidth beast in check

By Bob Wallace

Bandwidth busting isn't about policing the network industry.

Bandwidth busting is essentially making the most of LAN and WAN bandwidth without spending lots of money or letting network performance slip.

Some of the most popular techniques include trading in low-speed private-line networks for higher-speed frame-relay WANs, replacing shared-capacity LANs with switches and using Integrated Services Digital Network (ISDN), rather than dial-up modems, for remote access.

Although bandwidth busting can mean making an initial investment in equipment and sometimes software, more often than not the new networking scheme covers those costs and more in as little as several months, according to analysts.

And when it comes to saving money on the WAN side of the house, nothing is hotter than frame relay.

That's because many large and medium-size companies still have slow private-line data networks. Frame relay differs from those networks in that user data is sent over the carrier's public data network, which is far less expensive.

"Moving from private lines to frame relay typically saves users 30% to 40% on WAN charges," said Christine Heckart, an analyst at TeleChoice, Inc., a Verona, N.J., consultancy that specializes in carrier data services. "And users can boost network performance at the same time."

Dan Gonos, a telecom manager at Domino's Pizza, Inc. in Ann Arbor, Mich., moved six of Domino's administrative sites from 9.6K bit/sec. private lines to 256K bit/sec. frame-relay connections.

Gonos is saving his company roughly $25,000 per year with the AT&T Corp. frame-relay links. He has also increased by a factor of about 28 the bandwidth those sites now have.

"Network performance is excellent," Gonos said. "The bandwidth boost seems like the difference between a horse and buggy and a jet airplane."

But savings with frame relay don't stop there.

A growing list of vendors offer products that let frame-relay users send voice traffic over those networks, theoretically for free, once users buy the proper equipment.

Another option for users is to buy frame-relay access devices. These reduce frame-relay costs by letting users run voice, data, LAN and fax traffic over one connection.

Bandwidth busting conventionally applies only to WAN capacity, but scads of users are moving to switching to bust LAN bandwidth. Switches let users replace shared capacity with dedicated pipes.

Whereas a shared-capacity LAN forces 100 users to battle for the same slice of bandwidth, switching breaks them up into five- or 10-user chunks, easing network strain and boosting performance.

Switching also provides these users with dedicated access from the switch to centralized computing resources such as servers.

That was the case at Lehigh Valley Hospital, a regional hospital in Allentown, Pa., which increased performance and reaped other key benefits by moving from Ethernet hubs to Ethernet switches from UB Networks, Inc.

Streamlined management

"That enabled us to consolidate our servers from 20 to four, which, in turn, made server management considerably easier," said Dennis Kuhns, manager of network service at the hospital. "And we know we've saved big when it comes to software licensing by moving from a 2,000-user license to a 500-user license [for the servers]."

Shared bandwidth wasn't enough for the hospital because it wanted to distribute software from its centralized master control center. "That's not a problem with Ethernet switching, which means we save on ongoing network administration," Kuhns said.

Tying remote users into those souped-up LANs requires bandwidth busting, too. Frame relay is an option here, and so is ISDN. Although ISDN has limitations — it isn't offered everywhere and requires a dedicated line — its bandwidth makes it viable for some users.

"We've looked at both, and although frame-relay service and equipment pricing is falling fast, ISDN is cheaper today," said Bill Horst, chief at the General Services Administration's communications branch in Philadelphia. "It has the price and the flexibility we need to support remote sites."

Closer Look
Bandwidth busting

Climbing the bandwidth ladder

- **45M bit/sec.** The most widely used ATM speed
- **1.544M bit/sec.** (T1) – The common top frame-relay speed
- **128K bit/sec.** You get this speed if you combine two ISDN channels to form one
- **64K bit/sec.** You can get this from one channel on an ISDN line
- **56K bit/sec.** Frame-relay data service starts here
- **28.8K bit/sec.** The top speed of most analog dial-up modems
- **2.4K bit/sec. to 9.6K bit/sec.** Most old private-line nets run at this speed

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The Enterprise Network

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Northeast Utilities' John Boyd

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Look

Bandwidth busting

New Products

CheckPoint Software Technologies Ltd. has introduced CheckPoint FireWall-1 for Windows NT.

According to the San Francisco company, the product is a network firewall that supports virtual private networking, user authentication and client authentication.

It also lets Microsoft Corp. Windows NT network managers configure and manage multiple firewalls throughout the enterprise from one centralized management station.

CheckPoint FireWall-1 for Windows NT includes Microsoft's NT and Windows 95 interfaces. It lets systems administrators install, configure and manage the firewall either locally through an NT interface or remotely through a Windows 95 interface. It supports more than 100 applications, services and protocols. Administrators can customize the firewall to incorporate new and in-house applications.

Pricing will be announced in June.

▶ *CheckPoint Software Technologies*
(415) 562-0400

Wall Data, Inc. has introduced Rumba 2.1 for TCP/IP Networks.

According to the Kirkland, Wash., company, Rumba 2.1 is an integrated suite of TCP/IP and Internet client applications for Windows business users who require reliable access to information through the Internet and corporate intranets. It provides a common Microsoft Corp. Office-compatible interface on the desktop for all types of host connections over TCP/IP.

It features host and Internet access tools, electronic mail, file and printer sharing, network utilities, remote access and communication protocols.

Rumba 2.1 for TCP/IP Networks costs $149.

▶ *Wall Data*
(206) 814-9255

Compex, Inc. has introduced Compex MicroHub 100/TX, an eight-port hub, and Compex FreedomLine 100/TX PCI, a network adapter card.

According to the Anaheim, Calif., company, MicroHub 100/TX supports eight station ports that can be used for clients, servers or downlinked hubs.

It includes an additional designated uplink port that allows cascading of up to 30 meters for a total distance of 230 meters between nodes.

FreedomLine 100/TX PCI is an adapter card that operates at full duplex mode and automatically switches speed between 10M bit/sec. and 100M bit/sec., depending on the network technology.

Compex MicroHub 100/TX costs $999. Compex FreedomLine 100/TX PCI costs $125.

▶ *Compex*
(714) 630-7302

FSA Corp. has introduced CipherLink, a network encryption system.

According to the Calgary, Alberta, company, CipherLink can be installed on each network computer and transparently encrypts traffic on Windows, Macintosh and Unix networks.

It requires only software installation setup and doesn't need a dedicated key management server.

For sites where authentication is needed, the system supports user name/password challenges, one-time passwords, smart cards and encryption cards.

CipherLink costs $99 per machine.

▶ *FSA*
(403) 264-4822

Ibex Technologies, Inc. has announced FactsLine for Microsoft Corp.'a Windows NT: RightFax Edition, fax-on-demand technology.

According to the El Dorado Hills, Calif., company, the product integrates with RightFax, Inc.'a RightFax to let servers share computing resources, voice/fax boards, telephone lines and fax image libraries. It has robust reporting, monitoring and cataloging features along with voice menuing and fax document management.

FactsLine for NT: RightFax Edition requires an Intel Corp. 90-MHz Pentium running Windows NT 3.51 or later and a minimum of 32M bytes of RAM. It costs $2,500 for two incoming voice lines. Pricing for fax server software starts at $1,495.

▶ *Ibex Technologies*
(916) 939-8888

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DB/EXPO Salutes the RealWare™ Awards Finalists!

RealWare Awards

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Sybase Corporation	*MGM-United Artists*

Data Warehousing Finalists

Company	Customer
Angoss Software International, Ltd.	*Oxford Transplant Center*
Informix Software/Prism Solutions	*MCI Telecommunications*
Kenan Systems	*Hewlett-Packard Company*
MicroStrategy	*S.C. Johnson Wax*
NCR	*Union Pacific*

Internet Technology for Corporate Applications Finalists

Company	Customer
Informix Software	*The Internet Shopping Network*
MicroStrategy	*Hanaford Brothers*
Sybase Corporation	*Lombard Institutional Brokerage*

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Designed for easy selection and easy installation

NetShelter provides 73.5 vertical inches (42U) for industry-standard, 19-inch, rack-mount equipment as well as computer-grade ventilation to reduce heat build-up. There's no need to spend hours selecting from dozens of configurations. APC makes it easy, with a complete rack package right out of the box, requiring no cabinet assembly. The unit fits through standard office doors (unlike other racks... surprise!) and rolls into place on its integrated stabilizing feet and heavy duty casters. Back rails can be repositioned to various depths and cross members can be relocated for side-mounted equipment and convenient cable management.

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Access to the sides of the cabinet for equipment installation and service is provided in seconds by simply unlatching the locking side panels.

Moreover, locking handles in both the front and rear provide a tamper resistant environment. Optional switch kit combined with an APC Measure-UPS permits cabinet access monitoring for remote locations or during non-business hours.

Full Compaq® compatible rack for 20% less

Choose APC NetShelter for easy installation of Compaq's Rack-Mountable ProLiant® Server line, external disk storage and accessories with our optional mounting kit, at a total price much less then comparable premium enclosures. NetShelter's fully ventilated design exceeds Compaq's requirements for third-party racks.

Easy expandable design for growing systems

When your system needs exceed one cabinet, you can easily create a bay of connected NetShelters in minutes! Unlike other rack enclosures, NetShelter expansion requires minimal time, cost and parts. Simply connect your first NetShelter to our expansion model that includes preinstalled baying hardware and use the side panels from your original.

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UPS power management and diagnostic features increase uptime, reduce staff costs

PowerChute plus offers unattended system shutdown, automatic UPS configuration, Remote UPS management and Environmental/power monitoring so you can fend off potential downtime. For TCP/IP-based WANs, APC's PowerNet provides comprehensive control from your network management console.

Share-UPS™ offers reliable shutdown for multiple servers even for different OSs

Provides a rack mountable solution for unattended safe shutdowns of up to 8 servers (running the same or even different operating systems)—all from one UPS. Now you don't have to buy a separate UPS for each server in a mixed-OS environment.

Measure-UPS™ monitors NetShelter's environment even during power outages

APC's Measure-UPS prevents data or hardware damage by monitoring temperature, humidity, physical access and other external sensors. When alarm conditions occur, Measure-UPS along with APC software or hardware accessories can alert you and initiate a safe system shutdown. Moreover, network management, enhances the unauthorized access can be easily monitored with our Measure-UPS switch kit for NetShelter door openings.

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Multi-port rack-mountable modules (PNET4) protect your Ethernet and token ring network from lightning and surge events. Also available in telephone (PTEL1-4). When used with an APC UPS to completely lightproof your system, APC provides up to a $50,000 repair/replace policy on protected equipment (see policy for details).

Smart-UPS RM rack-mount UPS provides performance power management for advanced networks

The ideal uninterruptible power supply (UPS) for rack mounted file servers, hubs, routers, telecommunications systems and other mission-critical equipment within NetShelter.

A four of Smart-UPS RM award winning features:

- SmartNet™ accessories offer system functionality.
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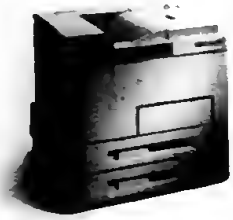
The new HP LaserJet 5Si MX network printer answers your users' questions so you won't have to.

Don't spend your day fielding questions about network printers. Instead,



take a look at the HP LaserJet 5Si MX. With enhanced user software, inquiries such as "Is the printer out of toner? Out of paper?" or "Is it busy with another job?" all get answered immediately. Right from your users' desktops. Any print job – from the very simple to the very complex – can be tracked, managed, cancelled, or sent to a different printer quickly and easily. And the best thing is that you'll never hear about it. So take the intelligently simple approach to network printing. It may just free enough of your time for other important matters, starting with lunch.

HP Network Printers
Just what you had in mind.

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A wireless LAN landslide

Vertical markets cheer low price of links

By Mindy Blodgett

At Wake Forest University, a wireless LAN means students can plug in to the library card catalog from the student union.

For the American Red Cross, wireless LAN technology eases the cost and fuss of setting up the temporary warehouses needed to stock emergency disaster services operations. These warehouses are mobilized in the wake of deadly hurricanes, floods and earthquakes.

These are just two examples of how wireless LANs work for users. The wireless LAN market is still largely confined to vertical industries such as retail, health care and warehouses, but it's growing (see chart).

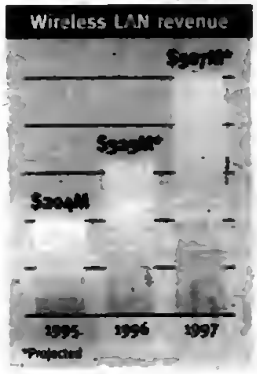
Behind the growth is recognition of how useful wireless LANs are and price cuts, analysts said.

"Office workers are starting to realize that it is really useful to be able to access the network from a conference room, from anywhere in their building or between buildings when the need strikes them," said Craig Mathias, an analyst at Farpoint Group in Ashland, Mass.

Mathias said wireless LAN nodes have dropped in price in the past year, from $700 to about $400 each. Wireless access points, which connect the user to the network backbone, cost about $1,200 each, down from more than $2,000 a year ago, he said.

Mathias said few users will ever install wireless LANs as the sole corporate network because of the LANs' slow data rate.

But he said more users are turning to the wireless technology to extend the wired LAN.



Source: Farpoint Group, Ashland, Mass.

Getting faster

Most wireless LAN links average between 1M and 2M bit/sec. rates — snail-like when compared with wired Ethernet links and their 10M bit/sec. throughput. But Mathias said products that yield between 3M and 7M bit/sec. are coming to market.

Jay Dominic, director of information services at Wake Forest University in Winston-Salem, N.C., said the installation of a wireless LAN is just part of an overall computer project to give network access to students, faculty and administration.

By September, all 900 freshmen at Wake Forest will tote IBM 360CS ThinkPads. Students will be able to obtain IBM PC Cards, which cost about $350 each, from special checkout areas.

They can use the machines and cards to wirelessly access the network from anywhere on campus, including from buildings that couldn't be retrofitted with dedicated lines to the network.

"The cost is pretty good considering what we are getting," Dominic said. "Some of those buildings just couldn't be wired, and some would be very expensive to wire. This is going to give the students true, ubiquitous coverage."

American Red Cross' Richard Hoffman *(left)* **and Greg Johnson:** *Wireless LANs reduce relief costs*

The wireless LAN piece of the project will cost Wake Forest about $55,000, Dominic said. That includes installing IBM wireless access points in buildings around campus.

Dominic said the drawback of wireless LAN transmissions is the relatively slow data rate.

But speed isn't an issue for the Red Cross. Instead, it needs to set up temporary communications and data networks in donated space whenever there is a disaster, said Richard Hoffman, senior systems programmer at the Red Cross in Falls Church, Va. "It is impossible to lay wires in those situations," he said.

Hoffman said wireless LANs reduce the cost of providing relief services because it takes less time to track supplies.

It costs about $25,000 for a wireless LAN that can be moved to the site of a disaster, he said.

Tivoli unveils tools to help rein in the Internet

IBM subsidiary fills the need for off-the-shelf help

By Bob Francis

Are you frustrated by the lack of tools available to manage the Internet?

Well, don't fret. Management software is starting to show up for the Internet, although it will be some time before systems administrators find their tool box overflowing with options.

Tivoli Systems, Inc. last week took two steps toward filling that tool box. The Austin, Texas, company unveiled a Net.Commander module for Tivoli Management Environment (TME), Tivoli's system management interface. The module will give system managers real-time Internet usage statistics. It will allow managers to distribute, install, configure and monitor World Wide Web software.

Tivoli, which is a subsidiary of IBM, also announced plans for Tivoli/Plus for Net.Analysis. This program integrates Net.Analysis — a Web server content analysis product from Net.Genesis, Inc. in Cambridge, Mass. — with TME, as another tool in Tivoli's systems management framework. According to Tim Saltmarsh, an information systems security manager at Texas Instruments, Inc. in Plano, Texas, administrators need more off-the-shelf tools to manage the Internet. "A lot of what we've used up to now has been developed here, simply because there wasn't much available," he said.

Tivoli also announced a partnership with SunSoft, Inc. in Mountain View, Calif., that seeks to define management interface standards for Web software. The Internet Management Specification (IMS) offers a standard way for management applications to interface with Web servers, Web browsers and mail and proxy servers. Several other companies, including Netscape Communications Corp. and Spyglass, Inc., also announced support for IMS, and the specification will be submitted to the X/Open Co.

Managing the 'net

IMS can interface with APIs in the following Internet services:

- World Wide Web
- Mail
- Newsgroups
- Proxy
- Gopher
- FTP
- Directory

Net.Commander currently supports Netscape servers that run on SunSoft's Solaris or SunOS and Netscape Navigator on Windows. A third-quarter release will support Microsoft Corp.'s Internet Information Server and Internet Explorer.

The Tivoli Plus module for Net.Analysis also will be available in the third quarter.

For an interactive CD-ROM kit that will answer a lot of your questions, call 1-800-527-3753, Ext. 1011.

Call now or contact us at http://www.hp.com/info/1011 and we'll send you an interactive CD-ROM plus additional information about the HP LaserJet 5Si MX. The CD-ROM employs 3-D animation and sound to present an interactive demonstration of the software, features, and other options in this incredible machine. And while you're looking, bear in mind that the HP LaserJet 5Si MX and 5Si are both priced lower than their predecessors. Which leaves just one last question to be answered, "What are you waiting for?"

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- 100,000 page/month duty cycle

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Digital management tool in clear view

By Patrick Dryden

Faithful users are glad Digital Equipment Corp. is starting to deliver tools promised a year ago to manage EnVISN, its enterprise virtual intelligent switched network (VISN) architecture.

The ClearVISN line of network management software will debut this week at Networld/Interop '96. With ClearVISN, Digital users will gain needed control over their internetworking gear in ways that other users already enjoy, the company said.

The first pieces of ClearVISN streamline management of routers from major vendors as well as Digital's virtual LANs, Remote Monitoring (Rmon) tools, hubs and switches. The eight tools are slated for June distribution on a single CD-ROM. They share a core database and set of management policies that users can run from a Microsoft Corp.'s Windows NT platform.

Eric Landwehr *is eager to wake up from 'the nightmare of creating virtual LANs' at Sanford Bernstein*

This approach addresses administrators' need for easier configuration and integrated management. Using Windows also makes it easier to use and offers better pricing.

Digital promises lights-out management for complex multivendor networks, but that goal remains another year out. More sophisticated versions of ClearVISN that provide extensive decisioo support and automation won't start arriving until late this year.

But ClearVISN already has turned out some management lights at America II Group, Inc., a global distributor that has invested $3 million in Digital network components. "By installing ClearVISN core services, I've cut 30% of my network management costs just for human capital," said Michael Mollicane, chief information officer at the St. Petersburg, Fla., company.

Mullicane put ClearVISN in control and then laid off six staffers who had been required to sit at the management console, watch traffic patterns and build a oetwork knowledge base.

Dependability

"ClearVISN won't go away and never gets sick, so it gives os consistent management," Mullicane said. "Also, it cuts the learning curve down to teaching policies just once — to the software."

Digital initially focused oo management from NT. Delaying Unix support won't please some Digital users, according to John Morency, principal at network consultancy The Registry in Newton, Mass.

But putting NT first suits such users as Eric Landwehr, network operations design manager at Sanford Bernstein & Co. The New York portfolio manager has migrated about 90% of the company's 2,000 clients and servers in seven offices from Unix to NT.

With the ClearVISN recovery software, which will ship for $495, Landwehr was able to save configuration data from his Digital hubs for the first time.

"Now I can set up s new hub or restore a faulty hub in seconds instead of an hour," Landwehr said.

He said he wants to try the virtual LAN manager, which costs $1,495, to speed and simplify building these temporary LANs for users.

Such capabilities are great for Digital users but are "basic stuff" already delivered by internetworking leaders, Morency said.

Early ClearVISN user Michael Mullicane *of America II Group, Inc. traded 'anecdotal management' by six staffers for consistent policies by software*

The folio of management applications can help users design policies and scale management by layering new tools from the package on top of the common core as their networks grow, said Nick Lippis, president of Strategic Networks Consulting, Inc. in Rockland, Mass.

Digital turned to partnerships for two parts of ClearVISN. The $4,995 multivendor router manager comes from StonyBrook Software in Bohemia, N.Y. The $2,995 Rmon manager to centrally monitor agents throughout the network is based on software from Frontier Software Development, Inc. in Chelmsford, Mass.

Such partnerships speed delivery to Digital users who have been waiting for Rmon and other tools.

"It's satisfying to see Digital pulling together products from experts instead of doing it all themselves," said Scott MacPherson, manager of information technology management at Ikea North America, Inc., a home furnishings retailer in Plymouth Meeting, Pa.

"Our small, centralized shop needs reliable tools to get our hands on more information about remote sites," MacPherson said.

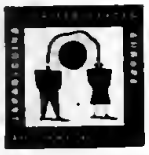
Novell enhancements previewed

Green River slips downstream to end of August

By Laura DiDio
SALT LAKE CITY

The news at Novell, Inc.'s Brainshare technology developer's conference held here recently wasn't *all* Internet-related.

Novell went to great lengths to say it is focused on the Internet and will move forward as a major player there. But executives also offered attendees a preview of the enhancements in the next release of NetWare, code-named Green River. Novell also said its planned introduction of the product has slipped from June until the end of August.



Green River, announced at last fall's Networld/Interop '95 show in Atlanta, is the first portion of Novell's three-phase strategy to enhance its core NetWare network operating system and NetWare Directory Services (NDS).

Green River was designed to implement many of the most common "user-requested NDS enhancements," said William Donahoo, Novell's acting vice president of marketing. These include new or enhanced utilities that will make it easier for network administrators to configure and manage their enterprise networks that use NDS, as well as tools that will give users more control over their desktops.

Tim Martin, assistant administrator of systems integration at the Ohio Department of Taxation in Columbus, said without NDS, the agency would need six administrators to manage its 12 sites. "NDS enables us to deploy just one or two network administrators to manage the enterprise. And when Green River is released, I'm confident [they will] be able to cut their administration time significantly in half," Martin said.

One Green River enhancement is the ability to use the NWadmin utility to make group changes to users or objects on the NDS tree. This will let administrators move groups of users and all network devices such as printers to different locations on the NDS tree. Currently, in NetWare 4.1, network administrators can move, add and change only one user or oetwork device at a time, Donahoo said.

"This type of functionality in Green River will greatly reduce administration time," said Thad Hymel, distributed systems manager at Hibernia National Bank in New Orleans. This feature is crucial to Hibernia, which has several thousand users connected to more than 150 NetWare 4.1 file servers throughout Louisiana.

"I can't wait for Green River to be available. When we initially migrated to NetWare 4, we outsourced the NDS configuratioo portion specifically because we were wary of the difficulty factor. But the improvements in Green River should make enterprise management much easier," Hymel said.

A recent study by Dave Cappuccio, an analyst at Gartner Group, Inc. in Stamford, Conn., said NetWare 4 and the subsequent Green River, Park City and Moab releases can potentially save customers "more than $900,000 [in management costs] over three years for companies with 30-plus servers."

Node crown

Last year Novell shipped more NetWare nodes worldwide — 51% — than all other network operating systems combined, according to International Data Corp., a market research firm in Framingham, Mass.

Briefs

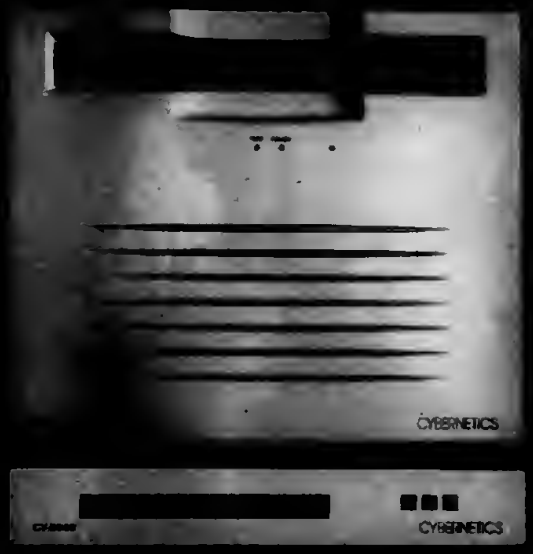
McAfee buys help

McAfee Associates, Inc. recently purchased Vycor Corp. in College Park, Md. The $9 million purchase gives McAfee in Santa Clara, Calif., a tool to differentiate the company's line of LAN management tools from those of its competitors. McAfee plans to integrate Vycor's client/server help desk products into its SaberTools network management product line over the next few months, company officials said.

3Com adds Token Ring

3Com Corp. has added the NetBuilder Remote Office (NBRO) 523 and 527 routers to its product line. Both are Token Ring routers. The NBRO 523 supports IBM SNA and has an Integrated Services Digital Network Basic Rate Interface (ISDN BRI) connection, which can be used as a primary or backup wide-area network link. The NBRO 523 costs $3,295, and the NBRO 527, which can be used as a central site router to support multiple NBRO 523s, costs $4,295. Both units are shipping.

210 GB Per Tape At 20 MBS.



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The CY-9000 can store 42 GB uncompressed on a single tape, at 12 MB per second. Optional data compression can boost tape capacity to up to 210 GB per tape and speed to 20 MB per second — for the fastest backup in its price range.

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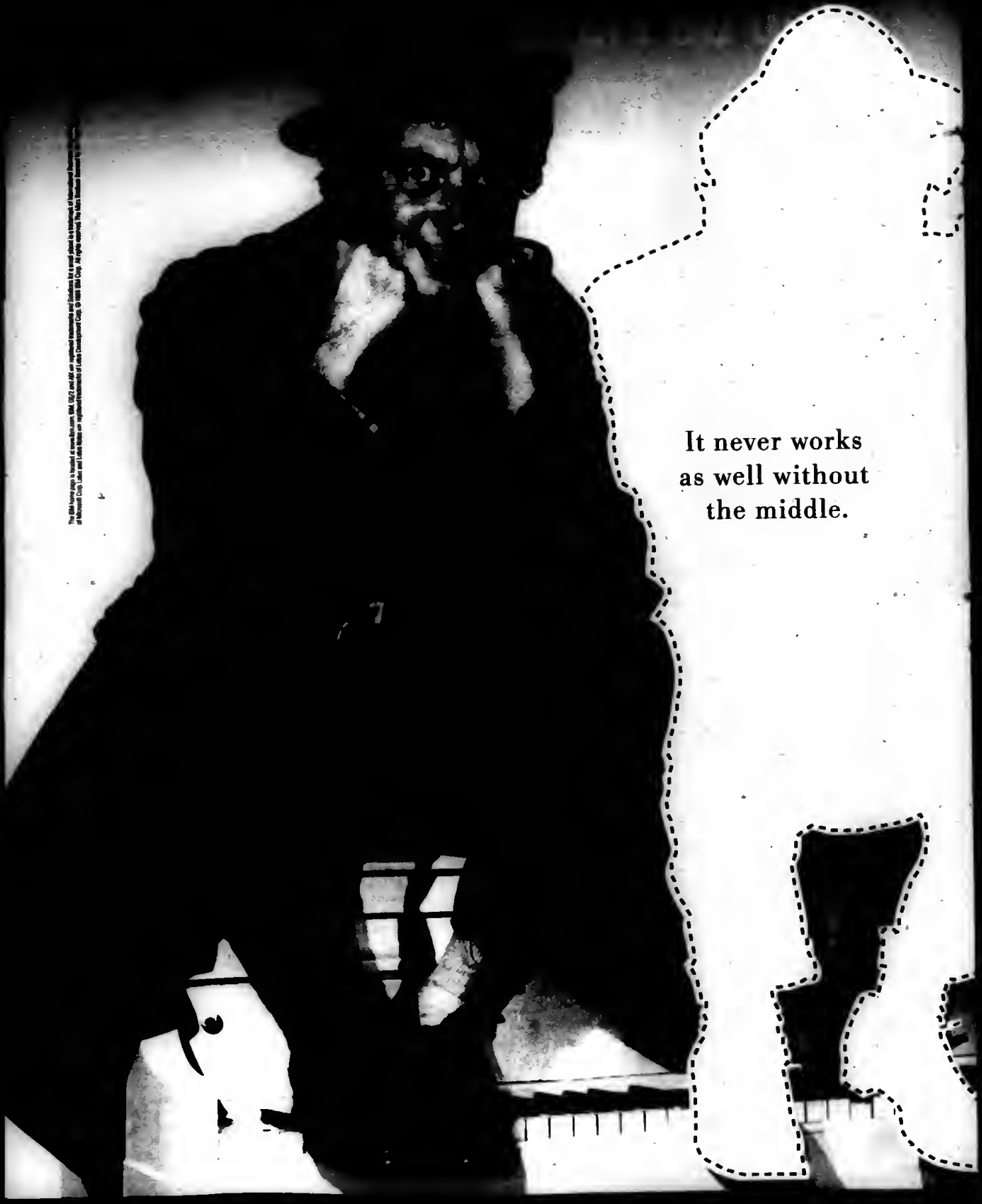
* *Sentry Market Research*
** *All drives, except VHS, are available with data compression*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Intranet firewall market is ablaze, 66

The Internet

Documenting the conference call

By Mitch Wagner

PictureTalk, Inc. in Pleasanton, Calif., is offering software to make conference calls the same as real-life meetings — except you have to provide your own crullers and coffee.

PictureTalk's software, released late last month, allows users to share presentations over the World Wide Web at the same time they are chatting on a teleconference call.

It works like this: Users download free client software. While participating in a conference telephone call, they all log in to the same uniform resource locator (URL) on the Web, which causes a server at that URL to send a signal to launch the client software on the users' machines.

Users can then share and alter presentations, spreadsheets or any other documents. The software works with videoconferencing as well, as users also can share video during PictureTalk sessions.

Long-distance selling

"I think there's a definite need for something like this," said Tim Kemp, manager of on-line services at First Chicago NBD Corp., a Chicago bank. "In the sales process, a salesman and prospect could share a screen and fill out an application together. You could present your value proposition to the customer through the Internet."

The free client runs on Microsoft Corp.'s Windows 3.1 and Windows 95 and Apple Computer, Inc.'s Macintosh System 7.x operating systems. The server runs on Microsoft's Windows NT and Sun Microsystems, Inc.'s Solaris. The server is priced starting at $10,000 per 100 concurrent users, plus $100 per each additional concurrent user.

PictureTalk officials said the client software is written in a platform-independent programming language and is about 400K bytes in size. They said they hope to port it to a wide variety of devices, from Unix workstations to set-top television boxes and palmtop computers.

A big question at this point is how the PictureTalk software will be able to compete with far less expensive software introduced earlier last month by FutureLabs, Inc. (http://futurelabs.com).

FutureLabs is offering a free, six-month trial and $49-per-year subscription. Alternatively, for $2,500, it will license the server for in-house operation.

PictureTalk said its product, which uses a client/server model, has faster performance than FutureLabs' peer-to-peer model. Also, the PictureTalk software gives the user greater control over changes to the original version of a document.

PictureTalk, Inc.
Pleasanton, Calif.
http://www.picturetalk.com

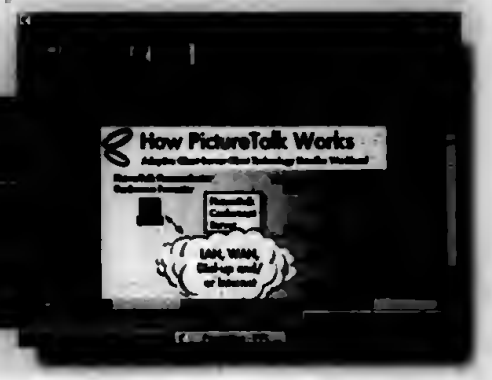
Product: PictureTalk server and client

Purpose: Allows real-time document sharing over the Web

Platforms supported: Windows 95, Windows NT, Macintosh and Unix (future)

Replaces: Proprietary whiteboard groupware

Price: Server starts at $[illegible]



April foolery

"AFI" is the Internet-accepted way to designate an April Fools' Day joke. And boy, the 'net is full of them. Watch out this year for a bulletin from a bogus task force that talks about Internet Cleaning Day. The missive urges users to shut down and unplug their computers from the 'net so that the worldwide network can be scrubbed and spruced.

Apple Computer, Inc. users seem to get hit hard with pranks this time of year. A collection of Macintosh-specific spoofs in recent years includes a fake press release announcing Caffeine Manager, a tool to let Macintoshes interface with soda and coffee machines. Another letter warned of hidden evil messages in Microsoft-made icons. "Bill Gates is the devil" and "Worship Bill" were among the damaging secrets contained in the icons. Check out http://www.[illegible].edu/tools/tools/humor/april-fools/home-of.html.

Trekkies and others interested in Star Trek will appreciate the Top 10 April Fools' Jokes on the Enterprise. It's at http://www.[illegible].org/~twilight/fools.html#A_2.

For a detailed archive of on-line April 1 humor dating back to 1994, go to http://[illegible].edu/[illegible]/april-fools.html. Check out one of last year's best jokes, which warned computer users everywhere of a "severe bit shortage." The bogus Emergency Computer Response Team told users to guard against bits "escaping into the atmosphere."

A related site archives Usenet-only pranks at http://[illegible].edu/pub/[illegible]/communication/april-fools/.

Hoaxes is perhaps the grandfather of all cyber April foolishness, dating back to the mid-1980s. For a history of the joke — in which a Usenet aficionado forged a post supposedly from a Usenet site at the Kremlin — see http://www.[illegible]/Computer/Jargon/Lexicon/[illegible]/Hoaxes.html. As the story goes, when a real Russian leads emerged several years later, many Usenet users didn't believe it.

— *Kim S. Nash*

Shipping company may sail intranets

By Kim S. Nash
OAKLAND, CALIF.

Like many of you, industrial shipper American President Cos. is weighing the costs, needs and tingly potential of using intranets to replace at least some of its systems.

The company, which shepherds heavy cargo by sea and land to destinations worldwide, sees timesaving, cost-cutting promise in making internal corporate use of the public Internet.

"I wouldn't say we've taken the plunge, but we're looking at the pros and cons," said Diane Silver, vice president of information strategy at the 148-year-old company.

In fact, a pilot this fall involving hundreds of users is expected to give the firm some answers.

Time is American President's biggest worry. An intranet could more quickly let the logistics department rework schedules when ships are late or a customer can't get cargo to a dock on time. Now those distress calls come from all over the world, in all kinds of ways: fax, telephone, electronic mail and a small, private electronic bulletin board.

No to Notes

Money counts, too.

The cost-conscious company doesn't want to spend excessively on new technology, Silver said.

Intranets, page 72

Internet firewall market is ablaze

By Gary H. Anthes

The market for Internet firewalls, already hot, is heating up further as companies roll out corporate intranets and seek ways to protect them.

Firewall pioneer Trusted Information Systems, Inc. last week introduced the Gauntlet Intranet Firewall, software to protect intranets from intrusion by unauthorized employees.

Fred Avolio, marketing vice president at the Glenwood, Md.-based company, said companies that are technologically savvy and especially concerned about security — such as banks and pharmaceutical companies — are pioneering the use of intranet firewalls, just as they did two years ago in the use of Internet firewalls.

Traffic blockers

Internet firewalls are computers — sometimes routers — that run specialized software with user-specified rules for blocking certain services or kinds of traffic between the public Internet and the private corporate network. Intranet firewalls do the same thing for subnetworks inside the company.

Sometimes an intranet firewall is set up to protect sensitive organizational units, such as payroll, from intrusions by employees outside those units. Sometimes they are set up to isolate a critical operation, such as a utility's nuclear reactor, while still allowing employees in that operation to use the full corporate network and the Internet.

Boston Edison Co. uses three firewalls — one from CheckPoint Software Technologies Ltd. and two routers — to protect the corporate WAN and the LANs at 20 sites. John Dubiel, manager of planning, said the arrangement protects the utility in these three ways:

- It blocks access to the corporate network by outsiders on the Internet.
- It blocks unauthorized employees from accessing several protected subnetworks, or intranets.
- It prevents employees from accessing the Internet in ways that policy forbids.

"We want to very tightly control access so that there are no inadvertent performance hits or anything that would be detrimental to the operation of these subnets," Dubiel said. "It's kind of like a double firewall."

Different molds

In addition to the move to intranet firewalls, firewall vendors are beginning to break out of the traditional Unix molds. San Francisco-based CheckPoint and Raptor Systems, Inc. in Waltham, Mass., recently introduced firewalls for Microsoft Corp.'s Windows NT. A number of their customers said they will standardize on NT to simplify their operating environments.

Coldwell Banker Corp. in Mission Viejo, Calif., for example, has nine Token Ring LANs tied together by a frame-relay wide-area network. At present, the LANs include Unix- and NT-based servers, but the real estate company will scrap the Unix boxes in favor of NT, said Theresa House, managing director for network services.

House said Coldwell Banker is also setting up an intranet for all employees to use. She said the company will use the NT version of CheckPoint's FireWall-1 to protect the frame-relay WAN and the new intranet.

Ted Julian, research manager for Internet commerce at International Data Corp. in Framingham, Mass., said end users who set up intranets may neglect security. "Intranets right now are kind of ad hoc, grass-roots affairs," he said. "So you may not be able to make the same assumptions about the person putting them together as if IS were involved."

Gracious hosting on 'net

No-hassle, high-speed Web sites available from BBN Planet

By Mitch Wagner

Media Circus *runs World Wide Web sites on BBN Planet's Web Advantage Silver and Web Advantage Gold plans. By doing so, the company gets high-speed Internet connections but doesn't have to maintain the servers in-house.*

BBN Planet has introduced a low-priced service that allows companies to put World Wide Web sites on computers owned and operated by the Internet service provider, using BBN's high-speed Internet connections.

The company, a unit of BBN Corp., last week launched Web Advantage Silver, a service with prices starting at $295 per month. BBN sees the service as a low-cost alternative for users who want high-speed access to the Internet but not the expense and bother of paying for a dedicated, high-speed connection and maintaining servers in-house.

Web Advantage sites are connected to the 'net via 10M bit/sec. links. The program is BBN's latest entry in a service area known as Internet hosting.

A hosting lets users control the content of a Web site while leaving the scut work of keeping it up and running to outsiders.

"It's far easier to do it this way than to bring the operation in-house," said Joe Butt, vice president of product development at Media Circus L.L.C., a marketing and design firm in New York.

Content control is another reason to use a Web host.

"We need to have control over a Web site internally," said Murray Lambkin, manager of training and development at Nowsco Well Services Ltd. in Calgary, Alberta. "Our business is very reactive to new technology, products and chemicals. We have to be able to update the system internally, rather than providing the information to someone else to do it."

Web Advantage Silver users can put up to 50M bytes of data on one of BBN's Silicon Graphics, Inc. servers. There is also a usage charge; users can deliver up to 300M bytes a month free. That means that if a Web page is 100K bytes, it can be viewed 3,000 separate times. After that, data throughput is charged at 18 cents per megabyte. There is a one-time start-up fee of $495.

The Silver program follows BBN's introduction late last year of the Web Advantage Gold plan. For $2,000 to $6,000 per month, the Gold plan gives users a dedicated server. The dedicated server ensures high throughput, said Carl Howe, product manager for Web Advantage.

The Gold plan also ameliorates security concerns, Butt said. "Some people get squeamish about sharing a server with 70 or 80 other users," he said. Media Circus uses the Gold and Silver plans.

BBN isn't the only company offering Web hosting services. Most Web consultants also offer the services, running sites on T1 connections, which are slower than the ones BBN offers. The big Internet services also offer Web hosting services. UUnet Technologies, Inc., for example, offers Web hosting that is priced competitively with BBN's; it costs $300 for up to 250M bytes of data.

Briefs

Web-ifying mainframe data

Database middleware maker **Information Builders, Inc.** branched out in a new direction with products designed to sweep mainframes on to the World Wide Web. Web3270 is a gateway that translates IBM MVS data to Web-readable Hypertext Markup Language. It is due to be available for free downloading from Information Builders' Web site (http://www.ibi.com). The New York vendor also plans to ship an MVS Web server late this year.

Company to ship NetWare Web server

North Andover, Mass.-based **Process Software Corp.** plans to ship a $795 Web server for **Novell, Inc.**'s NetWare operating system. The product, Purveyor for NetWare, will enter a market with few competitors. **American Internet Corp.** in Bedford, Mass., recently shipped a NetWare product; Novell itself licenses its Web server offering from American Internet.

Big Blue Java

Native support for Java, Sun Microsystems, Inc.'s Internet programming language, will be included in a release of IBM's OS/390 mainframe operating system due in September, said Herman Lamberti, vice president of marketing at IBM's System/390 Division. Lamberti said IBM this year expects a repeat of the mainframe growth rate that it achieved last year, when shipments increased by a whopping 60% to a record level of 255,000 MIPS.

SHORT TAKES CommerceNet, an alliance of vendors and user companies that promotes Internet business, started a similar group in Japan "to stimulate electronic commerce throughout the world," the group said. See http://www.commerce-net.ntt.jp. . . . Up and coming Internet applications development company **Business@Web, Inc.** in Cambridge, Mass., and **NEC Corp.** will develop a workflow product that works with enterprise business applications, internal intranets and the Internet.

Why go through the aggravation of hosting your company's Web site internally when you can turn the job over to BBN Planet, a company with unparalleled Internet experience? Just think. No late-night maintenance emergencies, no phone calls from customers annoyed by access problems, no staffing headaches. With Web Advantage, you get high-end UNIX™ servers running Netscape™ software, high-speed T3 Internet connections and round-the-clock service and support – all without losing control over your site's content.

For a free Cost Justification Analysis, visit http://www.bbn.com/webadvantage or call (800) 472-4565.

BBN PLANET

How Business Does Business
On The Internet.

Lotus

Lotus

New Products

Alaris, Inc. has unveiled QuickVideo and Videogram Player.

According to the Fremont, Calif., company, the products let users take video clips and captured video and create compressed multimedia presentations, or videograms. The videograms can include video, audio and text.

QuickVideo is a plug-in video capture board that compresses video before sending it to a hard disk. It includes features that let users package existing video clips or convert video clips from other compression formats into videograms. Videogram Player is a stand-alone application that plays back the videograms. QuickVideo costs $399. Videogram Player is available free at Alaris' home page (http://www.alaris.com).

▶ *Alaris*
(510) 770-5700

Itribe, Inc. has introduced NetCal 2.0, an interactive calendar.

According to the Norfolk, Va., company, NetCal 2.0 is an Internet and World Wide Web calendar that lets users navigate day, month and year calendars to post personal messages and important dates locally, regionally, nationally or internationally. Event entries are verified and approved before they are placed on-line.

NetCal authenticates a user's identity by electronic-mail address and password. It was designed to keep track of the events users enter and allows them to change or delete the events at later dates.

NetCal is free. More information is available at Itribe's home page (http://www.itribe.net/netcal/).

▶ *Itribe*
(804) 446-9060

Durand Communications Network, Inc. has announced MindWire NT.

According to the Santa Barbara, Calif., company, MindWire NT is a live Internet applications server with an integrated World Wide Web server. It was designed to let companies offer Internet groupware applications, on-line services and dynamic publishing in cooperation with their existing Web services. The MindWire client lets Internet surfers connect to all public access MindWire systems.

MindWire NT supports existing development tools. User access is controlled by a system of keys and locks managed by the system manager for each button, field or graphic on the MindWire menu.

Pricing for MindWire NT starts at $2,495 for a license for 10 simultaneous users. More information is available at Durand Communications' home page (http://www.durand.com).

▶ *Durand Communications Network*
(805) 961-8700

Terasoft Technology Corp. has unveiled Visual Web 1.0, Internet browsing technology for the World Wide Web.

According to the Milford, Mass., company, Visual Web 1.0 transforms a single-page view of conventional Web browsers into graphical images of any Web site. When users specify a Web site's uniform resource locator, the product brings up a panoramic view of the site's contents in its hierarchical layout, with each page labeled by its subject title.

Visual Web was designed to save users connection charges by allowing them to disconnect from their Internet service provider and use any Web browser to scan through the sites they download. It offers an overview of the site for navigation through large sites and lists local and remote hot links. It also lets users manipulate the graphical layout of Web documents on their screens.

Visual Web costs $29.

▶ *Terasoft Technology*
(508) 634-8400

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Messaging protocol is winning converts

IMAP lets users pick and choose messages

By Tim Ouellette

An emerging messaging standard for the Internet that gives users more options for accessing their messages is gaining interest among vendors.

The Internet Messaging Access Protocol (IMAP) lets users access their messages on a server and then choose which messages, or parts of messages, they wish to download.

This contrasts with the all-or-none approach of the current Post Office Protocol standard, which requires that a user download the entire contents of his in-box.

User control

"IMAP is important in the client/server environment. It gives users a lot more control over what mail resides on the server and what mail resides on the client," said Geoffrey Bock, an analyst at Patricia Seybold Group in Boston. "This has been a feature in LAN-based E-mail software for a long time."

For example, one user at a Canadian engineering firm said his salespeople don't want to download storage-hogging engineering drawings that are attached to electronic-mail messages.

And Internet E-mail software providers are taking notice, trying to make their products more competitive with popular LAN-based, proprietary packages such as Lotus Development Corp.'s CC:Mail and Microsoft Corp.'s Mail.

Although interest in the Internet is exploding, these Internet E-mail packages have yet to deliver the security and reliability that business users want and currently find in the more closed LAN-based products.

Last week, SunSoft, Inc. and Isocor, Inc. announced IMAP servers, and recently TeamWare began selling one. Even members of the newly formed Internet Mail Consortium (IMC), made up of Internet mail software companies, think adoption of the IMAP standard is as important as dealing with the security concerns prevalent among Internet users.

The IMC's two highest priorities are to "use the most effective security technologies on the Internet and rapidly deploy IMAP" in members' products, said Clyde Johnston, president of IMC member Innosoft International, Inc.

IMAP also lets several users share access to an account, supports server-based searches and provides message authentication.

embezzling funds by computer

American President Cos.
Oakland, Calif.
http://www.apl.com

Business: Transportation of heavy cargo worldwide via ocean, rail and roadways.

1995 sales: $2.9B
1995 profits: $30M

Goal: To quickly trace misplaced cargo and other shipping problems.

Technology: An intranet system using Netscape Web servers and browsers and a homemade Web-to-database connector. Other pieces are under review while the project is in development.

Intranets

CONTINUED FROM PAGE 65

Notes, for example, has been ruled too costly. A test of Lotus Development Corp.'s groupware a few months ago found that installing and maintaining Notes for 5,000 employees would be too expensive, Silver said. She declined to elaborate.

Now, roughly 10 people from information systems, marketing, customer support and other departments will study intranet possibilities, said Gil Roeder, director of marketing.

As at other companies, marketing has had a big say in how American President has used Internet technology. Marketing, rather than IS, spurred the company's external World Wide Web site.

The group plans its first intranet trial this fall and expects it to link "hundreds of users" in the Denver and Atlanta customer support offices to headquarters here in Oakland, Roeder said.

For the pilot, the company will use Netscape Communications Corp.'s Navigator 2.1 browser and Enterprise Server Web software. Hardware is from Sun Microsystems, Inc.

One problem solved

Already resolved is one of the bigger headaches of building an intranet: connecting the new stuff to existing databases. The legacy gear in question are IBM mainframes with IDMS databases and RS/6000 Unix machines with Oracle Corp.'s relational database.

The IS group has spun homemade Web-database translators using the Open Software Foundation's Distributed Computing Environment standards for writing distributed, mixed-vendor applications.

Ultimately, American President envisions linking its intranet with Web applications so customers can access data on their own shipments, similar to what FedEx Corp. offers.

"But we've got work to do," Silver said. "We know that."

Motorola service connects cell phones to the Internet

By Rebecca Sykes

Motorola, Inc. today announced a service that lets people connect their cellular telephones to the Internet.

Initially, the service will let users transmit 120 characters of digital information from the Internet to the phone display screen, where they now see their phone numbers, officials said.

Information short enough to fall within the character limits includes up-to-date stock prices, weather forecasts and sports scores, they said.

Motorola plans to leverage Code Division Multiple Access (CDMA), one of two burgeoning digital cellular voice offerings in the U.S. Within two months, CDMA cellular operators in the U.S. will begin field tests of the 120-character short messaging technology, Motorola officials said. The service should be commercially available sometime this year.

In addition to short messaging, Motorola's new service will offer text-to-speech capability, allowing cell phone users to dial in and have their electronic mail read to them by an automated reader.

At first, users will need to specify that certain E-mail — for instance, any bearing the return address of their boss — be routed to a server run by a third party. The third party would probably be the cellular operator that sells the user Motorola's service. By mid-1997, however, users will be able to dial in directly to their own computers to have their E-mail read.

Text-to-speech capability will be available for CDMA and the rival Time Division Multiple Access and European Global System for Mobile communications digital cellular technologies. The text-to-speech function can work on analog or digital phones, so subscribers won't have to buy new phones to use the service.

No tremors

Analysts agreed the new services will appeal to some users but said it will by no means shake up the cellular industry.

People on the road could check the latest stock price or shipment information right before going into a meeting, said Iain Gillott, an analyst at International Data Corp. in Austin, Texas.

"This is what we should be doing with wireless and the Internet for right now," Gillott said. "This is as good as it's going to get today" without solving some of the cellular industry's problems, such as cost, speed, coverage and latency, he said.

Pricing for the service will be set by the cellular operators, Motorola officials said.

Sykes is a U.S. correspondent for the IDG News Service.

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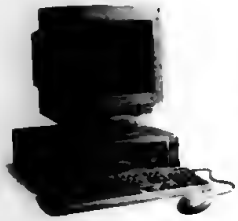

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intel inside pentium® processor

Data warehouse fills CVS prescription, 77

Corporate Strategies

Midrange moxie

Health care firm chooses AS/400s en route to objects

By Craig Stedman

Take your AS/400 green-screen medicine today, and tomorrow you'll get an object-oriented client/server treat.

That's the prescription Apria Healthcare Group, Inc.'s information systems department has written for its users.

The $1.1 billion home health care company in Costa Mesa, Calif., is doing away with a mishmash of systems and standardizing on IBM's AS/400 midrange computers.

Apria, which was formed last June by the merger of two rivals, is expanding a network of low-end AS/400s that run homegrown, terminal-based applications to cover its 350 branch offices.

Midrange, *page 77*

Method to upgrade madness

Process improvement methodology yields million-dollar savings

By Thomas Hoffman

It often takes a year or more to design and deploy a new system. But what if you could encourage teamwork, make faster decisions and cut out wasteful processes along the way?

WMX Technologies, Inc., an Oak Brook, Ill.-based environmental services firm, found that taking those steps helped it upgrade its billing system in just two months and save $11,000 on the project last year.

The development team of end users and IS technicians was guided by a process-improvement methodology called Workout, developed by Leap Technologies, Inc. in Chicago. It helps IS/business teams identify processes that need to be streamlined and then take action.

For WMX, the goal was to revamp an IBM mainframe-based billing system to track national accounts better and churn out customer invoices faster. WMX re-engineered the system to enable about 20 end users in the billing department to download the mainframe data into PCs running Microsoft Corp.'s Access database. The enhanced system went live last July.

Using Workout on that and several other projects yielded savings of $1.3 million last year. With more than 70 Workout teams in operation, WMX expects to save an additional $4.5 million this year, said John Biedry, WMX director of business.

WMX's Sharon Metz *(left)* and Patricia Anderson *helped implement Leap Technologies' Workout, which saved the firm $1.3 million last year. This year, savings could reach $4.5 million.*

The methodology has other benefits for IS. "It's giving us a better understanding of the needs of our end users and their departments," said Patricia Anderson, manager of systems development at WMX.

In some ways, Workout is similar to total quality management (TQM), a philosophy of continuous process improvement.

Like TQM, Workout emphasizes teamwork between departments — such as IS and accounting — to run through a list of deliverables, such as a decision about the appropriate graphical user interface for a system.

But unlike TQM, Workout is fast. Projects are done in six to eight weeks because ideas are acted on immediately.

Without Workout, "it probably would have taken us a couple more months to get the new billing system in place," said Sharon Metz, supervisor of national accounts at WMX.

The usual 18- to 24-month IS development cycle is "not acceptable in today's business environment," where competition forces companies to react immediately to changing market conditions, said Tom McAndrew, a managing director at CSC Consulting in Waltham, Mass.

[redacted]

Enrique Crespo Jr.

Selling automation to salespeople

For salespeople, the Information Revolution is a dilemma. And that's a problem for us in IS.

Even as salespeople have become more sophisticated during the past three decades, at their core, they have remained "people persons." They are the gregarious types who understand the value of shaking hands and playing golf on a rainy day.

But with the Information Revolution, knowledge and information is now a key factor to successful selling. And that means computers.

And computers mean that salespeople now have a machine as a partner.

It's a cultural challenge that is difficult to bridge. How do we deal with this situation? The basic approach consists of issuing a PC to every salesperson and expecting them to take to it like the proverbial ducks to water. I have seen companies implement things this way. It doesn't work.

The computer itself is no guarantee of success. Plus, computer equipment is an expensive proposition. Based on my experience and industry sources, the cost could be as high as $15,000 per user. This figure includes costs such as hardware, software, training and support. It doesn't include the ongoing costs for programming and telecommunications.

What's the payoff?

For an investment of this nature, firms need better assurance that sales will increase dramatically. We need to understand how to obtain the necessary productivity from our commitment to computers.

As a responsible IS manager, you must pay close attention to picking the hardware and software and resolving the other technical issues involved in a rollout. But, above all, ensure that time, effort and money are invested in changing the culture.

During the past year, I directed a 120-person nationwide sales force automation project. We put great emphasis on the cultural change it would bring. Before we deployed complex application programs, we visited our regions and held two-day training programs for groups of 8 to 12 salespeople.

Once they understood that we were there to support their efforts rather than to force a new process, they were very cooperative. Our salespeople gradually got comfortable with everyday applications such as word processing and spreadsheets and are now ready to accept custom sales applications.

You cannot automate salespeople; you can only provide them with a better way to sell. Give them knowledge and flexibility, and they will take care of the return on investment factor.

Crespo is a manager of corporate sales systems at The Torrington Cos. in Torrington, Conn.

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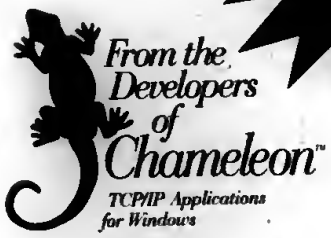

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[redacted]

Don Tennant

Hong Kong: cautious optimism

I recently asked 100 IS professionals whether they felt threatened by the approach of 1997, when China will gain control of Hong Kong.

There was dead silence among the group attending a panel discussion at this year's Hong Kong Share/Guide conference. If anyone did harbor fears, they weren't willing to admit it.

That's not to say no one expressed concerns. For starters, economic security was a hot topic.

"We are all optimistic. But for how long?" one audience participant asked. "[IS] professionals in China are willing to receive something like HK$30,000 [U.S.$3,879] per year. I assume that anyone sitting in this room probably receives more than that in one month. How can we face that kind of competition in terms of compensation?"

According to Astec International Group MIS manager James Tang, the issue boils down to the ability of the people of Hong Kong to contribute business and management skills.

"For the programmer, I'm very pessimistic — it's a matter of supply and demand, so don't kid yourselves. There are a lot of good programmers in China, India and many other places. And they are coming here to grab your job," he warned.

"On the other hand," Tang said, "at the management level, for people who understand business, there's always a role for you to play. So you should be very optimistic."

But as one audience participant pointed out, there is a caveat to that assessment. Whether Hong Kong's IS professionals will be able to capitalize on their business prowess is an open question, he argued.

International markets

"It depends on whether Hong Kong can maintain its free business development environment and free information-absorbing environment," this audience member said. "Without these factors, the advantage of our management people will become less and less. The reason people in Hong Kong have an advantage is because Hong Kong has a very free environment for us to share our information and experience. That may not be the case in today's China."

But another panelist, Hong-Kong Telecom IMS project manager Dorothy Chan, said Chinese authorities will not take any actions that jeopardize Hong Kong's position as a technological gateway to the Mainland.

Others in attendance raised concerns about the apparent smugness of Hong Kong's IS professionals.

"We can pat ourselves on the back all we want," one audience participant chided. "We think [Mainland Chinese] are not as skilled as we are. How big is our biggest network? How big is theirs? Skill comes with complexity. Hong Kong people don't have that kind of experience."

Hong Kong's IS professionals also lack experience with the kinds of infrastructure problems that will confront them when their responsibilities eventually extend to the Mainland, noted Jagdish Bajaj, MIS manager at KPS Retail Stores.

In the end, the consensus appeared to be one of cautious optimism. Bajaj said it best. "It is an opportunity, for those people who do not see it as a threat."

Tennant is editor in chief of *Computerworld Hong Kong*.

Data warehouse fills CVS prescription

Pharmacy will also move to client/server

By Michael Goldberg
WOONSOCKET, R.I.

For the IS managers and business decision-makers at CVS/Pharmacy, building a data warehouse was more than an attempt to gain a strategic advantage — it was a matter of survival.

Before raising a data warehouse in 1993, CVS, a division of Melville Corp., was managing all the information from its chain of 1,400 pharmacies in the Northeast on an IBM mainframe using applications developed in the 1970s and early 1980s. It still has its mainframe, but it plans to eventually switch all applications to a client/ server system that includes the data warehouse.

CVS' Howard Edels: *'This project is critical to [CVS'] future'*

Howard Edels, MIS senior vice president, said CVS had nowhere else to go: Changes in the health care system made information that could cut costs vital. "This project is critical to this company's future," he said.

After completing the first phase of its data warehouse, CVS is already reaping just that kind of data, according to Edels.

For instance, CVS can now analyze when stores are busiest and which stores sell the most of what kinds of retail items and prescriptions, according to Shafi Shilad, MIS vice president for pharmacy systems. CVS can also verify HMO-based prescriptions on-line.

"In the old days, we would say, 'If your store has X amount of [total] sales, this is what you will carry,' or 'If you fill X number of prescriptions, this is what you will carry,'" Shilad said.

The data CVS is collecting and analyzing also helps set staff schedules, and Shilad is working on applications to control inventory store by store.

That's in the near term. Edels said CVS envisions being able to market specials to individual consumers based on their buying patterns, make more use of less costly generic drugs, send customers reminders about taking medicine that could keep them out of the hospital and even offer pharmacists' services for a fee.

With its new data warehouse, *CVS can analyze when stores are busiest and which stores sell the most of what kinds of retail items*

Norton Greenfeld, president of Implements, Inc., a consultancy in Wayland, Mass., said CVS' project "is exactly typical" of strategic data warehouse projects. "There are enormous paybacks to being able to see the business in a way that you didn't before," he said.

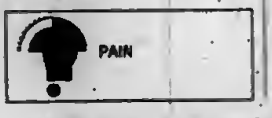
Big news

Data warehousing and data mining — setting up large stores of data for strategic decision-support analysis — are hot topics these days. Hardware vendors that once focused solely on price/performance benchmarks are coming out with service programs tailor-made to help users unfamiliar with the territory to navigate their way.

In CVS' case, Edels said the project has cost unspecified millions of dollars for equipment and consultants, required eight monthly meetings with management to detail the system's strategic importance and work challenges, and entailed hours of training for 100 IS staff and 35 end users. Edels said he is still looking for the comprehensive systems management tools that he likes so much on his mainframe.

For hardware, CVS chose Unix-based Nile symmetrical multiprocessing servers from Pyramid Technology Corp.

CVS uses an Oracle Corp. Oracle7 database system on a 10-processor Nile server. It has two dual-processor Nile servers for on-line transaction processing of prescriptions.



Midrange

CONTINUED FROM PAGE 75

The rollout, due to be completed this fall, will include the purchase of 150 new or upgraded AS/400s, which will push Apria's installed base to more than 200. Multiple offices in some areas will share one AS/400.

Running in parallel is a project to develop new client/server AS/400 applications using IBM's VisualAge tool and Smalltalk object language. Smalltalk versions of two corporate applications went into use in January, and branch offices should see programs with graphical user interfaces (GUI) and client-level processing potential late in the year, said John Farmer, vice president of information services at Apria.

Apria is part of a very small advance group of AS/400 customers that use object technology internally, according to industry watchers. "Typical AS/400 shops are pretty conservative. A lot of them aren't changing quickly" from the traditional green-screen terminal approach, said Tom Bittman, an analyst at Gartner Group, Inc. in Stamford, Conn.

Slow and steady

Not that Apria is spooning up huge doses of the new stuff right away. Cutting over to the object-oriented approach is "a multiyear process," with no definite end in sight, Farmer said.

The health care market "is changing dramatically, and that will have an impact on how fast we proceed," Farmer said. "But the applications we have today are serving our business very well. It's not like we have to get off them yesterday."

By using VisualAge, Apria hopes to gain faster turnaround times and the ability to reuse code. "There is tremendous pressure to reduce costs in the health care industry, and IS is a big part of the equation," he said.

He declined to specify either the money or the time that Apria hopes to shake out of its development process. But he noted that the two corporate-level applications went into production less than a year after Apria began working with VisualAge.

Apria wants to shift most processing to PCs and recast its AS/400s as database and network servers. For the near future, though, it is still looking to find a way to ease the burden on users who may have to switch between terminal mode and a GUI. "We're going to try to minimize that, but we need some more time to work it out," Farmer said.

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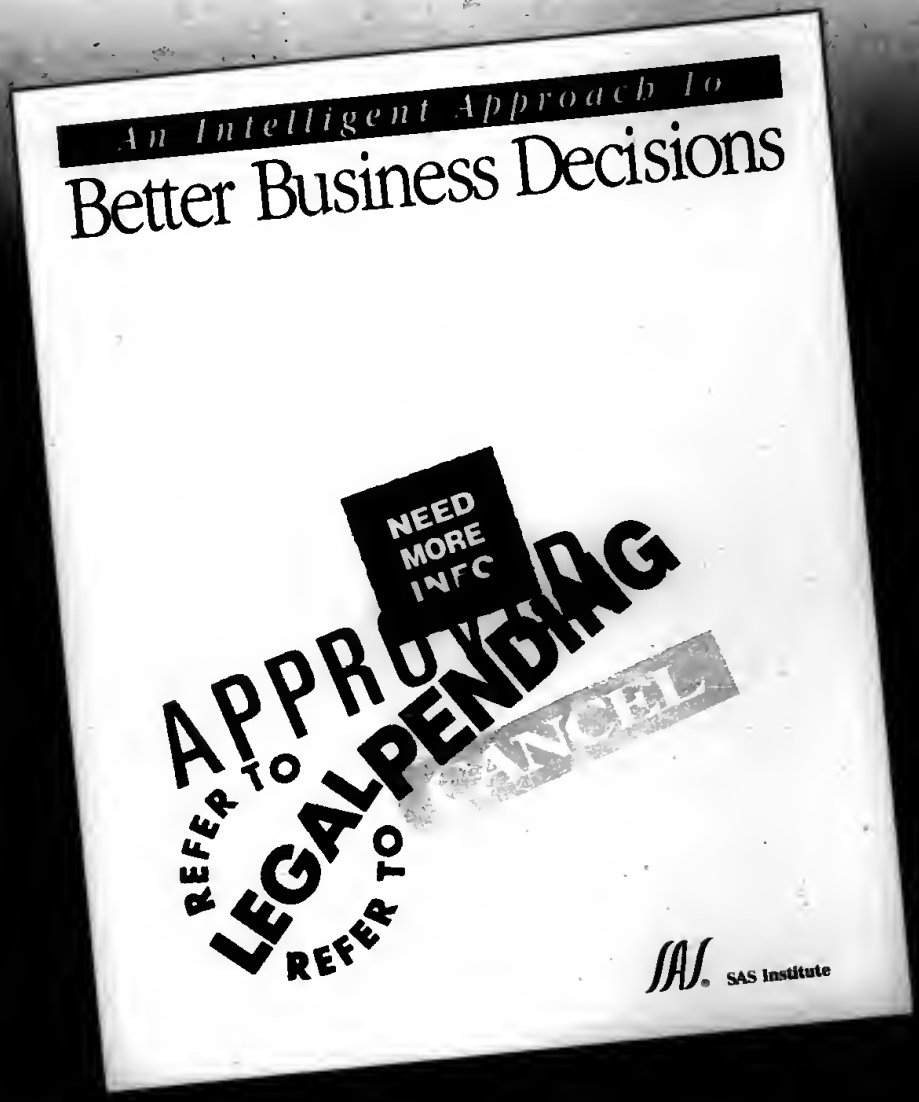

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Having Hiring Headaches? Veteran IS managers pass along their interviewing secrets. Page 84

Managing

Go CIO

Your very own subscription to The Wall Street Journal

Escape from cube land! You move to a tiny, airless, windowless office. But an office it is, by God.

Reorg alert! Reorg alert! Pull together a plan that justifies all your direct reports, and make it snappy.

The new CFO just adores cost justifications. LOSE A TURN while you work up some ROI numbers.

E-mail goes down. Executive information systems goes down. You're goin' down. To the HELP DESK, that is.

Stock options

Two days after you argue passionately for sticking with the mainframe, *Computerworld* runs an article lionizing client/server. Spend a turn at the HELP DESK.

Two days after you argue passionately for a move to client/server, *Computerworld* runs an article lionizing the mainframe. Spend a turn at the HELP DESK.

You hire an intern despite grave doubts. She creates a Web site that generates more hits than *Playboy*'s. ROLL AGAIN, hero.

Uh-oh, your boss just read another trendy management book. LOSE A TURN while you bandage your feet after all that fire-walking.

Start

We tried to think of something more random than corporate politics. All we could come up with was a game of chance. Pull a few compadres into your cube, and let the die decide who's on the fast track and who's destined to field help desk calls for life.

Help desk

Rules

1. Use one die.
2. Each player selects a GAME PIECE.
3. Roll die to determine playing order. Highest number goes first.
4. When you land on a space, follow the instructions on that space (such as ROLL AGAIN or LOSE A TURN). If the space has no instructions, your turn is over.
5. If you are sent to the HELP DESK, you have our sympathies. To exit the HELP DESK, roll the die. Your first move is to the space you landed on that sent you to the HELP DESK. If, when you leave the HELP DESK, you roll a 1, you don't have to return to the HELP DESK.
6. The first player to land on EXECUTIVE TRACK wins. You must roll exactly the right number to land on EXECUTIVE TRACK.

Game pieces - clip and tape to a quarter

Octopus

Keeps a tentacle in every project, invited or not.
Assets: Suction-cup grip on department doings, surprising speed.
Liabilities: All those limbs sometimes get tangled up where they don't belong.

Brainiac

Can write code with one cerebellum tied behind his back.
Assets: Smart, smart, smart.
Liabilities: Tends to sneer at those less intelligent than himself, which is everybody. Often not overburdened with social skills.

Climber

Bound and determined to make it. Will crawl over bodies, including yours, to do so.
Assets: Not weighed down by pesky conscience or sense of teamwork.
Liabilities: Secretly hated by all.

Schmoozer

To mask lack of knowledge, spends most of the day perched on the corner of others' desks jabbering.
Assets: Loved by non-techies in the company.
Liabilities: Usually absorbed into Marketing or Corporate Communications at mid-career.

Pack your duffel for a managers' retreat! You gain a deeper understanding of your peers, a renewed sense of purpose and a bad case of poison oak.

My, my, annual review time already? LOSE A TURN, lock yourself in your office and write "exceeds expectations" 108 times.

February. Conference Palm Springs. Life is good

You get keys to the Executive washroom

After too many evening classes and Saturdays spent studying, you earn an MBA. That diploma ought to brighten up your cubicle wall. ROLL AGAIN.

The company's senior managers invite you along for a round of golf. Just make sure you don't win, for crying out loud.

You know all those disaster recovery books you use as paperweights? Well, they burn. Along with the rest of the building. Spend a turn at the HELP DESK; you've got some explaining to do.

Time for a major systems upgrade. The bad news: It's a pain in the neck. The good news: Vendors take turns buying you lunch for a month.

Executive track

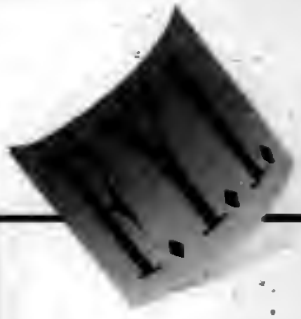
_____ is the new chief information officer at Hugex Corp., the Miami-based provider of sports cars, golf clubs, beer and high-performance hammocks.

_____ will be responsible for charting IS strategy, doling out incisive quotes to an obedient trade press and visiting Hugex offices in Aruba, Paris and Oahu.

Hugex CEO J. Alfred Pushover angrily denied published reports that _____'s physical appearance played any role in the promotion. "Sure, _____ looks like a movie star; that's a given. But _____ was hired on ability, pure and simple."

_____ will report to Pushover. For now.

By Steve Ulfelder
Designed by Mary Beth Welch
Illustrations by Scott Matthews



The Quick and the Responsive

The prospect of being hanged concentrates a man's mind wonderfully. So does the thought of being the next retail chain to go bankrupt.

Faced with soft consumer spending and intense price pressure, retailers are focusing more heavily than ever on Quick Response and Efficient Consumer Response (QR/ECR), according to a recent survey. The survey was conducted by Kurt Salmon Associates (KSA), a consulting firm in Atlanta, and *RIS* (Retail Information Systems) *News*, a publication based in Randolph, N.J.

QR/ECR is an effort in the apparel and grocery industries to cut the time and cost of ordering, delivering and restocking products.

Retail chains, for example, might link their point-of-sale (POS) systems to information systems at manufacturers or distributors. Retailers can automatically reorder products when stock falls below critical levels and can reduce the inventory they must hold.

The survey reported that 46% of buying and merchandising managers are very committed to QR/ECR efforts, compared with only 20% at the same time last year.

Seventy percent of the manufacturers that responded to the survey said they are involved in joint QR/ECR efforts with retailers, which indicates that retail chains are making such systems mandatory for suppliers.

Tightening up the distribution chain also means faster communication between POS systems and ordering, inventory and accounting systems. A full 90% of retailers and manufacturers had begun such systems integration efforts by last year.

All this change isn't easy, but KSA Vice President Peter Harding has some tips for making it happen.

They include getting top management to commit to change, establishing communication and education programs to create a corporate climate for change, establishing performance measures to reflect new corporate priorities, and including all affected business units in cross-functional teams to map out the changes.

— Robert L. Scheier

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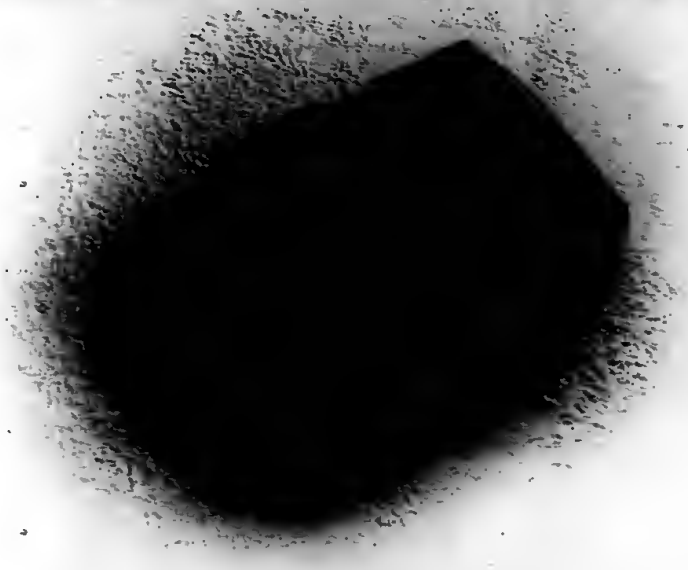

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3M *Innovation*

Ready, Provoke, Hire

Are the boneheads you've hired making life miserable? Chin up! These hiring tips will help you do better next time.

By Alan S. Horowitz

Managers are only as good as the people on their team, yet new managers often fumble their first hiring decisions. They're afraid.

"Life-threatening" is how Richard Lennon, vice president and chief information officer at Brown-Forman Corp. in Louisville, Ky., describes some new managers' view of strong, competent job candidates. These are competitors who, they think, want their job.

That's a mistake. The better your subordinates, the better your performance. A weak supporting cast forces you to work harder and increases your risk of failure.

Overcoming insecurity is the first step toward developing managerial skills at least equal to your technical ones. The next step? Don't hire in your own image. New managers typically come from the ranks of technicians. Since this is their claim to fame, they relate best to — and hire — those who are most technically competent.

Dan Roberts, president of Ouellette & Associates Consulting, Inc. in Bedford, N.H., divides information systems skills into three categories: "critical, important and nice-to-have." In-depth product and technical knowledge is nice to have, Roberts says, but enthusiasm, being a self-starter, communication skills and patience are critical.

Curiosity factor

Since technology changes as fast as Internet sites, technical knowledge has a shelf life akin to that of fresh strawberries, which is why Ron Griffin also downplays it. As senior vice president of information services at The Home Depot, Inc. in Atlanta, Griffin looks for employees with the aptitude and willingness to learn. He figures he can teach them technical skills later.

New managers, in their insecurity, tend to talk more than they listen, according to Roberts. You learn nothing about job candidates when you're talking. If you dominate interviews, shut up and start polishing your listening skills.

The computer industry is among the most dynamic of any, which makes learning ability a necessary skill for any IS employee. Ask the candidates what they have done during the past 12 to 24 months to upgrade their knowledge, such as reading books and attending classes and seminars. Have them recall one thing learned from each and how it helped their work. This reveals how interested the candidates are in learning and how much they retain, says Gopal K. Kapur, president of the Center for Project Management in San Ramon, Calif.

Part of learning is curiosity. Griffin tosses out a controversial statement to see if candidates take the bait. For example, he might say, "'I used to work at XYZ Corp., and one of the things I learned there was . . . which is why we don't do that here.'" He's being provocative; he wants them to respond to the statement, not ignore it.

Lennon takes a somewhat different approach to testing people's interest in learning. He asks such common questions as "Where have you failed, and where have you done well?" and follows up with, "What did you learn from that experience?" What candidates learned is more important than what actually happened, he says.

Try the run-on interview technique. Ask three questions in rapid succession. For instance, fire off a technical question, a what's-important-to-you question and a tell-me-about-an-experience question. Don't provide any opportunity between questions for answers. This moves candidates out of their comfort zones, even if they've prepared answers to these questions. Griffin does this to gauge candidates' ability to listen, think and organize.

Request that a written summary letter be submitted the day of the interview or the next day. Don't mention this until the end of the interview. These letters reveal how well candidates listen, what is important to them and how well they communicate. Kapur, who uses this technique, says, "Before I marry these people, I want to know what their style of thinking is, how creative and thoughtful they are and if they are good listeners."

Know what you want and need before you start the hiring process. Look beyond technical skills to the candidates' personalities and desires. Only then can you choose those most likely to boost you to the ranks of the managerial elite. ■

Horowitz is a freelance business and technology writer in Salt Lake City.

Katherine Chilton

Hire-power reading

Ron Griffin, senior vice president of information services at Home Depot, recommends the following books for improving your hiring practices:

Stephen R. Covey's **The 7 Habits of Highly Effective People** (Simon & Schuster, 1989) and the book he co-wrote with A. Roger Merrill and Rebecca R. Merrill, **First Things First** (Simon & Schuster, New York, 1994)

Eric Harvey and Alexander Lucia's **Walk The Talk: And Get The Results You Want** (Performance Publications/Performance Systems Corp., Dallas, 1995)

Managing from the Heart by Hyler Bracey, Jack Rosenblum, Aubrey Sanford and Roy Trueblood (Delacorte Press, New York, 1990)

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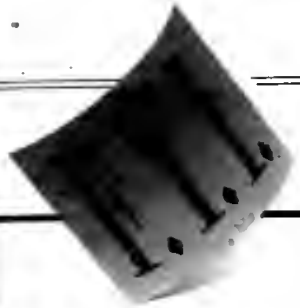

Webmasters vs. scoutmasters?

What happens to a company's distributors when it starts selling products on the World Wide Web? Pessimists warn that Web sales will drain business from distributors, damage a company's credibility in the distribution channel and confuse customers. Optimists claim the Web complements existing distribution channels and lets vendors sell to customers it otherwise wouldn't reach. A vote for the optimists comes from an unlikely source: The Patriots Trail Girl Scout Council. Each year about this time, the Boston-area group sends more than 20,000 Girl Scouts door-to-door to sell cookies. This year, the council also is selling cookies on-line at http://cookies.openmarket.com/GSstore.

Feza Oktay, chief financial officer of the Patriots Trail Council, insists there's no channel conflict.

Only about 1,000 boxes have been sold through the Web site since it was established Jan. 23 — not even a blip compared with the 1.2 million boxes of cookies the Council has sold through traditional means since that date. Scout research shows that 90% of the population would buy Girl Scout cookies if asked, but only 50% are ever approached. "There's a huge market out there of people who want to buy cookies but never have the opportunity," Oktay says. Now that we have Netscape Communications Corp. browsers on our PCs, this means no cube-to-cube canvassing by parents, right? — *Robert L. Scheier*

May Conferences

MANAGEMENT

IS Financial Benchmarking and Peer Analysis. Las Vegas, **May 1-3** — Contact: Financial Management for Data Processing, San Francisco, Calif. (415) 731-3706.

IT ExecuTrends '96: Managing Chaos in a Distributed Computing Environment. Atlanta, **May 1-3** — Contact: Gartner Group, Inc., Stamford, Conn. (800) 645-6395.

Tracking Data on the Move: 1996 Information Integrity Conference. Atlanta, **May 5-8** — Contact: Unitech Systems, Inc., Naperville, Ill. (800) 950-5225.

Training Directors' Forum 12th Annual Conference. Tempe, Ariz., **May 5-8** — Contact: Conference registration, Minneapolis, Minn. (800) 707-7792.

Getting Your Data in Shape: The Marathon Steeplechase. Miami, **May 6-8** — Fee: $995 to $1,495. Contact: Ashley Pearce, Gartner Group, Inc., Stamford, Conn. (800) 778-1997.

Interactive '96. Atlanta, **May 12-15** — Conference on interactive learning. Contact: Softbank Institute, Medford, Mass. (800) 348-7246.

Strategic Uses of Information Technology. Stanford, Calif., **May 12-17** — Contact: Stanford Business School, Stanford, Calif. (415) 723-3341.

Business On-line '96. San Francisco, **May 13-15** — Contact: Giga Information Group, Cambridge, Mass. (617) 982-9500.

Application Development: 1996 — Last Stop Before 2001. New Orleans, **May 16-17** — Fee: $1,195 to $1,495. Contact: Gartner Group, Inc., Stamford, Conn. (800) 778-1997.

INDUSTRIES

Forum for Handheld Computing in Health Care. San Francisco, **May 8-10** — Contact: World Marketing Strategies, San Francisco, Calif. (415) 252-8008.

Toward an Electronic Patient Record '96. San Diego, **May 11-19** — Contact: Medical Records Institute, Newton, Mass. (617) 964-3923.

Sixth International Conference on Flexible Automation and Intelligent Manufacturing. Atlanta, **May 13-15** — Contact: Georgia Institute of Technology, Atlanta, Ga. (404) 894-3068.

Competitive Investment Strategies: Establishing Market Dominance in a Converging Telecommunications Industry. New York, **May 16-17** — Contact: Pam Watson, ICM Conferences, Inc., Chicago, Ill. (312) 540-3856.

PCS Rapid Deployment Strategies to Capture the Mass Consumer Market. Dallas, **May 16-17** — Conference on personal communications services (PCS). Contact: IBC USA Conferences, Inc., Southboro, Mass. (508) 481-6400.

Successfully Implementing Object-Oriented Technology for Telecom, Cable and Wireless Companies Conference. Chicago, **May 16-17** — Contact: Global Business Research Ltd., New York, N.Y. (212) 366-3212.

USER GROUPS

1996 DataFlex Conference: DataFlex Means Business. Orlando, Fla., **May 6-8** — Contact: Data Access Corp., Miami, Fla. (800) 451-3539.

1996 Micro Focus User Conference. Orlando, Fla., **May 13-17** — Contact: Conference headquarters, Palo Alto, Calif. (415) 496-7356.

The Connect 1996 Annual Conference and Technical Seminars. Anaheim, Calif., **May 13-17** — User group conference for Texas Instruments, Inc. software. Contact: Connect, Chicago, Ill. (800) 867-4891.

OCSIG Spring '96 Conference. San Diego, **May 15-18** — Contact: Oracle Computer-Aided Software Engineering Special Interest Group (OCSIG), Wilmington, N.C. (910) 452-7444.

Information Builders Users Meeting and Educational Conference. Orlando, Fla., **May 19-22** — For users of Information Builders, Inc. software. Contact: Information Builders, New York, N.Y. (212) 736-4433.

Global Developers Conference. Framingham, Mass., **May 20-22** — For developers of file transfer protocol software. Contact: Registration, Andover, Mass. (800) 767-2336.

TECHNOLOGIES

Ensuring Success with Your SAP R/3 Implementation. Washington, **May 1-3** — Fee: $695 to $1,595. Contact: American Institute Forum, New York, N.Y. (800) 345-8016.

Using the Internet for Research & Development and Data Collection. Nashville, **May 1-2** — Contact: International Quality & Productivity Center, Little Falls., N.J. (800) 882-8684, Ext. 5165.

Nastec '96. Orlando, Fla., **May 5-8** — Annual conference of the Association for Corporate Computing Technical Professionals, known as Naspa. Contact: Tracy Binsfeld, Naspa, Oak Creek, Wis. (414) 768-8000, Ext. 106.

HOT HAPPENING

Object World East. Boston, **May 5-9** — Contact: Object World Corp., Framingham, Mass. (800) 241-4600.

Electronic Entertainment Expo. Los Angeles, **May 16-18** — Contact: MHA Event Management, Norwood, Mass. (617) 551-9800.

System and Network Administration Conference '96. New York, **May 20-23** — Contact: Miller Freeman, Inc., San Francisco, Calif. (800) 441-8826.

Digital Television & Internet Conference and Expo. New York, **May 21** — Contact: *Convergence* magazine, Denver, Colo. (303) 393-7449.

CES Orlando: The Digital Destination. Orlando, Fla., **May 23-25** — Contact: Consumer Electronics Shows (CES), Arlington, Va. (703) 907-7600.

PODC '96. Philadelphia, **May 23-26** — The Association for Computing Machinery's 14th annual symposium on principles of distributed computing (PODC). Contact: James E. Burns, Bellcore, Red Bank, N.J. (908) 748-2819.

SECURITY

Second Annual Information Security Conference. Chicago, **May 14-16** — Contact: CMP Trade Show & Conference Services, Jericho, N.Y. (800) 808-3976.

Computer Audit, Control and Security Conference. Houston, **May 19-24** — Contact: Information Systems Audit and Control Association, Rolling Meadows, Ill. (847) 253-1545, Ext. 472.

Calendar announcements should be submitted at least six weeks prior to the event and include the title of the event, dates, location, theme or focus, keynote or major speakers, principal topics and a contact person, organization and phone number.

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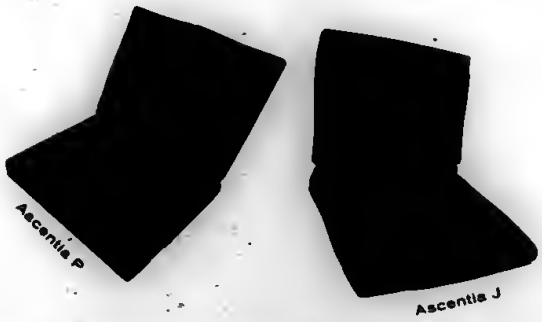

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Power Tools

A clear improvement

Clear Process, a process charting and analysis program, is an excellent management tool

By Jeffrey Gordon Angus

Clear Process
Clear Software, Inc.
Newton, Mass.
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(800) 338-1759

Computing has not been kind to software that takes the middle ground. Low-end applications such as Claris Corp.'s ClarisWorks are popular because they're quick to learn. People buy supertankers such as Microsoft Corp.'s Word 6.0 because they do everything anyone could imagine. In-between applications, which try to balance essential features with ease of use, have struggled in the market.

I hope Clear Software, Inc.'s Clear Process will buck the trend. Clear Process supports the drawing of process flowcharts. The product is positioned among the easy-to-learn flowcharting of Visio Corp.'s Visio and the powerful decision-analysis process modeling of Lumina Decision Systems, Inc.'s Demos or High Performance Systems, Inc.'s Ithink. Clear Process also incorporates some analysis and modeling tools that are fairly easy to master. The result is a well-balanced product that can help planning managers expand their analytical capabilities.

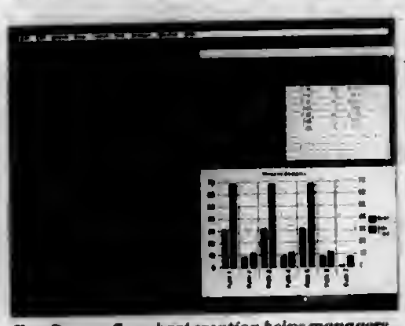
The quick pick

Clear Software already has a competitive flowcharting program called All Clear. Clear Process uses All Clear to construct process flowcharts by using underlying templates.

The flowcharting program offers two ways to design flows: drag-and-drop and outlining. I like this flexibility because while some people are quicker using drag-and-drop tools, many prefer to write high-level code. Either way, the program is fast.

On my 50-MHz Intel Corp. I486-based machine that runs Windows 3.1, the program updated an edited flowchart very quickly using either method. Once you've created a flowchart, the program runs an analysis and provides spreadsheets that show calculated results for time, cost and other variables. This Microsoft Windows 95/Windows 3.1 program has done a good job of working like Microsoft's Excel; it uses many Excel command sequences for manipulating data in the worksheets.

In the database section of this analysis area (one of four sections), you inherit a column of process names from your flowchart. To these you can attach simple columns such as cost, time or cost per hour, or program more complex algorithms. If you dictate a path through the flowchart, the program will calculate and show you the results of that path.



Clear Process *flowchart creation helps managers analyze and choose the best course of action*

And Clear Process has muscle. You can analyze individual paths or all possible paths in your flowchart. You can assign names to paths for easy replay and sequencing. You can have the system chart every possible path for your data flow and analyze all the paths.

You can assign probabilities for each branch of the path, by assigning your estimate of the percentage of likelihood that each result would happen. This capability supports elementary process simulations, and the program has just the tools to do that. For example, you can find the right balance between staffing the help desk with junior aides and adding senior technicians. You can use historical data to simulate the help desk process with different staffing levels, then measure wait-time averages and time spent per query. You also can figure out the least expensive way to meet a standard, such as answering 90% of all questions within four hours for less than $250.

The on-line help is much better than average, and the written documentation is concise, well-organized and informative. The only improvement I can think of would be a more thorough index.

If you want to go beyond drawing flowcharts without investing more than 80 hours to master an industrial-strength business process redesign package, Clear Process offers 70% of the function of these packages for 10% of the required effort. ■

Angus is a systems analyst at The Data Works Ltd. in Seattle.

IS Manager's Bookshelf

Virtual Realities

Grenier and Metes provide a useful handbook for building virtual organizations

By William E. Eager

Ray Grenier is an expert on telecommunications and interactive work processes. George Metes, president of Virtual Learning Systems, Inc., works with organizations on human systems integration and distance learning.

Going Virtual is the pair's second book. It's an excellent guide for sponsors or leaders of a project to create a virtual organization. It's full of checklists, readiness assessments, potential pitfalls and barriers to success, and it's loaded with practical advice. The authors obviously have been there and done that. Their writing is dense and full of information. It's best digested, like rich food, a little at a time.

Going Virtual: Moving Your Organization into the 21st Century
By Ray Grenier and George Metes
(Prentice Hall Professional Technical Reference, Upper Saddle River, N.J.; 256 pages; $27.95, paperback)

The first three chapters present the case for virtual organizations. These chapters are weak and fail to create a burning desire to plunge ahead.

Assuming you had that desire before you picked up the book, skip these chapters and proceed to the good how-to advice beginning in Chapter 4.

Chapters 4 through 8 address the people issues and soft skills needed to create a successful virtual organization. These chapters and Chapter 11, which deals with strategy, should be required reading for executive sponsors and project leaders. Chapters 9 and 10 describe the technologies needed to support a virtual organization. Chapters 12 to 22 are organized like a how-to manual around specific topics, such as developing an implementation plan, assessing organizational readiness, process re-engineering, building virtual teams and continuous learning processes.

Skim the material first, then go back and use the checklists and suggestions in each chapter as you encounter that challenge on your own virtual journey.

The epilogue is a good review of the authors' key points and addresses an important reality: Transitioning to a virtual organization is like redesigning an airplane while it's flying. Don't become so focused on your destination that you fail to keep the airplane up in the air. ■

Eager has been a chief information officer at four large companies in the past 19 years. He is a partner at CSC Consulting and Systems Integration in Cincinnati.

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40. Wholesale/Retail/Trade
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60. Government - State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./ Retailer
99. Other _____ (Please specify)

2. TITLE/FUNCTION (Circle one)
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21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgr., Tech Planning, Administrative Services
23. Dir./Mgr. Sys. Development, Systems Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
80. Sys. Integrators/VARs/Consulting Mgt.
CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr.
12. Vice President, Asst. VP
13. Treasurer Controller, Financial Officer
DEPARTMENTAL MANAGEMENT
21. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.
OTHER PROFESSIONAL MANAGEMENT
90. Information Centers/Libraries, Educators, Journalists, Students
99. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)
Operating Systems
(a) Solaris (e) Mac OS
(b) Network (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No

4. How many people are employed at this location and in your entire organization, including all of its branches, divisions and subsidiaries? (Select only one per column.)

	1. At this location	2. Entire Organization
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B. 10,000 – 19,999	☐	☐
C. 5,000 – 9,999	☐	☐
D. 1,000 – 4,999	☐	☐
E. 500 – 999	☐	☐
F. 100 – 499	☐	☐
G. 50 – 99	☐	☐
H. 20 – 49	☐	☐
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Bouncing Back

Ed Yourdon spins a more optimistic book on the future of the American programmer

Overwhelmed by foreign competition and runaway technology, American programmers were reeling five years ago. Today, invigorated by the Internet, they're back on their feet.

So says Edward Yourdon, developer of the Yourdon Method of structured analysis and design, observer of the worldwide technology scene, consultant and author of 21 books, including *Rise & Resurrection of the American Programmer*, published last week by Prentice Hall.

News of the resurrection is especially welcome from Yourdon, whose 1991 book, *Decline and Fall of the American Programmer*, read like a pink slip for the traditional programmer.

The Internet has changed that by suddenly giving American programmers the edge over foreign contenders, Yourdon says. To take advantage, however, they must leave tradition behind and run with the new technology. Right now.

Kathleen Melymuka spoke with Yourdon at Kennedy International Airport in New York as he prepared to depart for conferences and speaking engagements in Munich, London, Brussels, Bogota, Lima, Lisbon, Brussels (again) and Luxembourg.

Bouncing Back, *page 94*

Rise & Resurrection of the American Programmer
By Edward Yourdon
(Prentice Hall PTR, Upper Saddle River, N.J., 318 pages, $26.95, hardcover)

Bouncing Back

CONTINUED FROM PAGE 93

CW: To put your new book in perspective, can you talk a little about *Decline and Fall?* In it you argue that developers — even those using newer tools such as Visual Basic — are in peril.

Yourdon: There are now a number of places around the world where very well-educated, English-speaking software people are very eager to get even a small slice of the pie. That's where people are doing the same kind of software development work wa're doing at a third or a fifth or a tenth the price.

These are people with superb educations: Asian and Indian people who come here to school, stay five years or so and go back home. An Indian programmer making $3,000 a year could take a job from an American programmer making $60,000. [See the Feb. 26 and March 4 issues of *Computerworld* for more on Indian programmers.]

CW: But American programmers like to think there's something peculiarly American about great software design. Doesn't that play into this equation?

Yourdon: Certainly there are a whole bunch of software technologies where we have led the way, but sooner or later some of this becomes mature and stable and drops to the level of a commodity. If you're at the leading edge you're in great shape, but if you're developing payroll systems in Cobol or even Visual Basic, those are fairly well-understood commodities.

CW: Since *Decline and Fall*, what aspects of the situation have gotten worse?

Yourdon: Many of the overseas competitors have become more organized and more aggressive. Five years ago, India promoted itself as a source of cheap labor aven if it wasn't always terribly good. Now, they are promoting themselves in terms of quality and productivity and talent.

Motorola is a classic case. Motorola set up a brand-new operation in India. They didn't have to deal with the problems we have of teaching new technologies, getting people to change sloppy methodologies and making drastic changes in the culture. They had tha luxury of building a new culture.

They rented a building, hired 200 of the top people from the Top 5% of Indian computer scienca institutes, showed them Motorola technology and methodologies and said, "If you want to work here, play by these rules." In three years, they got themselves assessed at Level 5 on the [Software Engineering Instituta] scale. Only a handful of organizations in this country are at Level 4 or 5.

CW: But overseas competition is threatening virtually all U.S. industries. Is there anything about the software industry that makes the situation particularly dire?

Yourdon: It doesn't require very much capital to get started. You just need a PC, a smart person and access to electricity. Anybody can buy a Pentium machine for $2,000 and get started. That has long been one of scarlest parts of the software industry as compared to, say, tha automobile or computer hardware industry.

CW: The good news appears to be the Internet. You think it can go a long way toward resurrecting the American programmer. Why?

Yourdon: So much depends on the whole telecommunications infrastructure that serves as the foundation for the Internet. Here [in the U.S.], it's pervasive. Every kid has access. You don't see that in other countries. Overseas, tha Internet tends to ba limited to universities, where you may need to ask permission to use it. People don't have it at homa nearly as widely.

CW: What does that mean to the average programmer?

Yourdon: There are still a lot of Cobol programmers who see thamselves as an endangered species. Five years ago I was telling them they had to becoma a lot more productive. A lot of them said that was not the problem; they weren't worried about Indian Cobol programmers who would work at a tenth the prica as much as they were about younger Visual Basic programmers from this country who would work at half tha prica.

The message is that you're really responsible for your own career and professional development. If your company recognizes that need and cooperates, terrific. If they don't, you'd better do it yourself.

That's one area where I was wrong. The biggest competitiva threat was not from overseas, but from Amaricans half their age and salary using a new generation of client/server tools.

Today, Cobol programmers are looking to see how they can get into Visual Basic and Delphi, but they should be looking to see what skills they can davelop with regard to the Internet.

CW: Such as?

Yourdon: You can be a Netscape expert, specializa in security or some other angle. The most obvious is to becoma a webmaster, but any high school kid can learn to do that. The more axotic stuff like Java involves skills the average programmer can appreciate, and not any high school kid can write a Java program.

To the extent you learn to do that, it opens terrific opportunities, but other countries will catch up. Thare are people who are extraordinarily talented all over the world at a lower price.

CW: What if I've spent the past two years becoming a Visual Basic guru? I could argue that those skills play to client/server now, and Bill Gates says Visual Basic Script will play on the Internet as well.

Yourdon: Yeah, but it's too early to tell. Certainly Java has 99% of the media attention. Visual Basic will be a contender, and there will be other contenders as well: Delphi, PowerBuilder and Smalltalk. Whatever skills you've been focusing on, the vendors will be providing enhanced versions for the Internet. That's where you ought to be moving your skills.

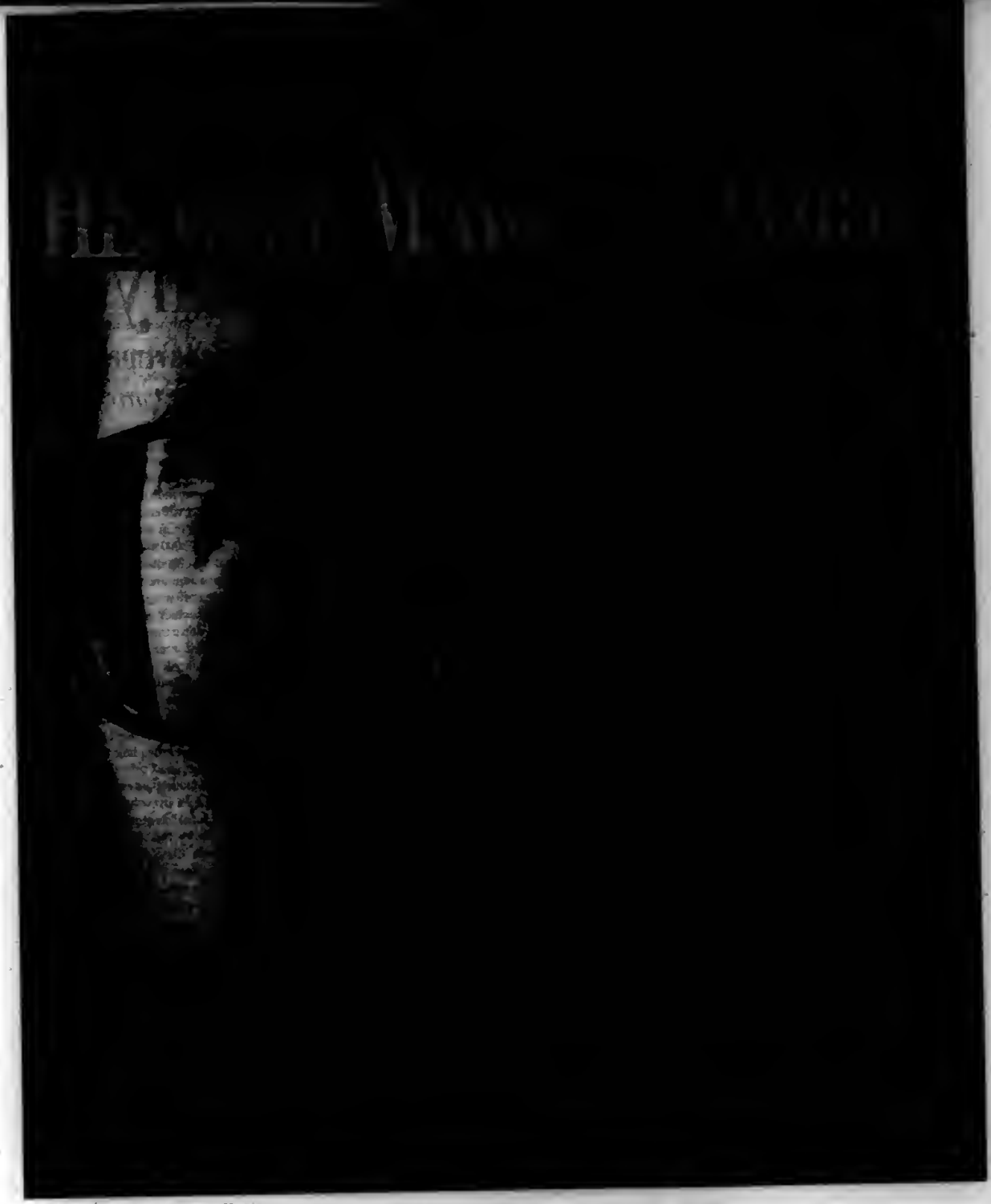
There's a lot of stuff you can do on your own. When you get home, you can turn on your PC and dial up a lot more easily than most people throughout the world. You can become a Java master, and if you can't persuade your company to adopt new technology and you see them getting more stagnant in older client/server technology, then you'll be prepared to jump to another company.

CW: As I read your advice, it's to jump in and make yourself an Internet expert regardless of your employer's take on the 'net.

Yourdon: That's part of a broader bit of career advice worth mentioning. I've been hearing from people since the earlier book, and [they say] employers blame the employee for becoming useless. They dump them because they're obsolete, and the employee feels betrayed because the company didn't keep his skills current. That's a miserable position to be in.

The message is thet you're responsible for your own career and professional development. If your company recognizes that need and cooperates, terrific. If they don't, you'd better do it yourself. The biggest thing on the horizon is the Internet. Run with that even if your company is way behind you. ■

Melymuka is a freelance writer in Duxbury, Mass.



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INSIDE:
Selling your soft skills, 97

WANTED: One company to assume responsibility for one complete, experienced IS department.

Position available immediately. Must be willing to relocate to Redding, Calif.

By Candee Wilde

In this era of re-engineering and restructuring, Simpson Paper Co.'s planned downsizing would hardly he exceptional — if it weren't for the remarkable response of information systems employees when they learned their jobs were at risk.

Rather than individually updating their resumes for a venture into the job market, Simpson Paper's 70-person IS department has created a group resume. They hope it can lure to the rural community of Redding, Calif., an employer in search of a complete IS department.

The IS department organized a point group, called Team 2000, which has posted "employer wanted" information on the World Wide Web. The site contains details about its goals and skills and the special attractions of the community, which is located about 150 miles north of Sacramento, Calif.

"We want to market ourselves as a group, not as individuals," explains Renee Anderson, an IS project manager and core member of Team 2000. "We don't really want to find individual jobs. We want to attract something bigger than we could as individuals."

The downsizing is the result of Simpson Paper's decision to sell some of its units, which will let the Seattle-based company focus on its core business. The number of layoffs or the time frame for the downsizing is uncertain. The management at Simpson Paper is supportive of the group's effort and optimistic about its success.

"Although our new strategic direction will likely prevent us from utilizing all of our current employees, we are confident that their skills and innovation will compel businesses to strongly consider this area of the state for future growth," said Jon Irwin, vice president of Simpson Paper. "We believe that the talents and enthusiasm of the Team 2000 members will pave the way for a bright future for them and for the Redding area."

Executive recruiter Richard Wonder says he has never heard of such a large group of people teaming up to cope with pending layoffs.

"I think it's very creative," says Wonder, founder of The RWA Group in New York. He says Team 2000 might find its best chance of being hired en masse with an IS consultancy that is interested in opening a branch office. Finding several dozen potential analysts or consultants who are looking for work simultaneously provides a very rare opportunity to start a business quickly, he says.

In the meantime, the IS employees have come up with a few strategies of their own. In the past few weeks they have done the following:

- Surveyed the entire department to find out the skills they collectively possess and which ones they need to be marketable.
- Chosen volunteer instructors to lead classes in technologies and programming languages for co-workers who want to develop new skills.
- Organized the Team 2000 point group, whose mission is to attract a new employer to their community.
- Gained permission from company management to rally the cooperation of other departments, local residents, economic development organizations and state agencies.
- Created a site on the Web.
- Prepared press releases for government agencies, industry groups and individual companies in industries that might consider setting up shop near Redding.

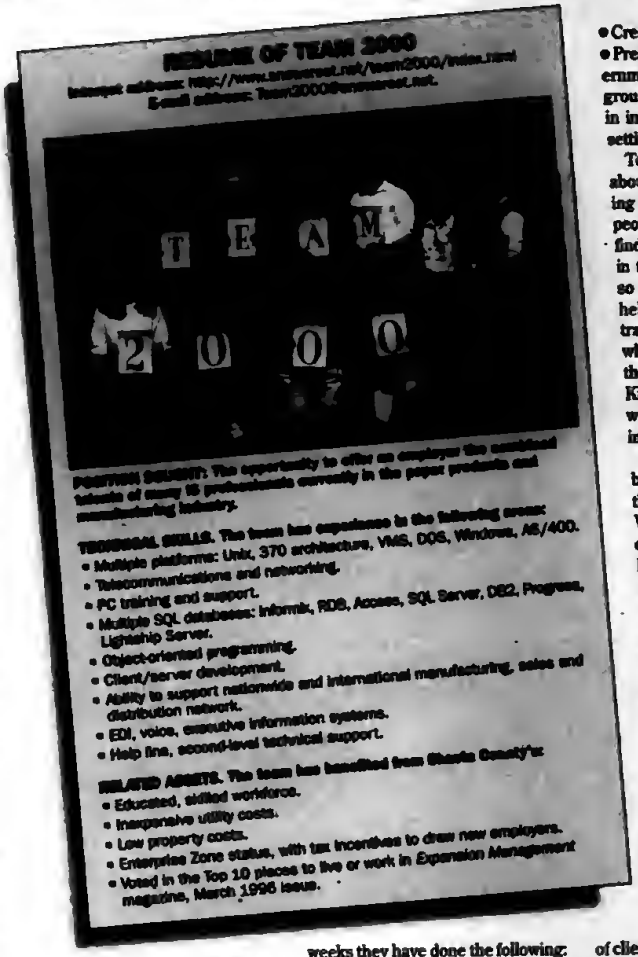
Team 2000's efforts began about a week after the restructuring was announced. A handful of people in IS prepared a survey to find out which skills the people in the department had. They also called recruiters and read help wanted ads in computer trade publications to find out which technologies were hot in the job market, according to Al Kiser, a senior project manager who is spearheading the training program.

The skills classes, which will be taught by volunteers from the department, will focus on Windows NT, Unix, and Microsoft Corp.'s Visual Basic, Kiser says. So far, 39 people have signed up for training.

Now that Team 2000 has made contacts with state and local agencies, the next step is national publicity. Press releases will be part of that strategy. But the cornerstone in their effort is the Web site.

Should it fail to attract a new employer, Team 2000 is exploring the possibility of acting as an IS satellite office for a company located elsewhere. Another possibility: set up shop as consultants and contractors and offer IS services to a range of clients.

With the help of employees who may be laid off from sales, marketing and other departments "it's almost a whole business we can come together to offer," says Dolores Bielle, a supervisor and senior technical analyst, who is also part of the Team 2000 group. ■



Wilde is a freelance writer in Easton, Conn.

Selling Your *Soft* Side

Technical skills may still get you in the door, but it's the people skills that will win you the job

By Rosemary Cafasso

You're an IS professional shooting for a job at Cigna Corp. as an applications development project leader.

You've rehearsed your answers to questions you thought would be asked, and you can even draw diagrams to show your programming skills. Then Tom Vines, vice president of human resources for Cigna, leans across the table and asks you to describe the team on which you recently worked.

Here's a hint: He's not particularly interested in the coding details.

"The conversation can tell you if they've had experience building teams, including complex teams with a lot of interpersonal issues," Vines says. "It will give you an idea of how sensitive they are."

Sensitive? This is an information systems job, right? Right. Increasingly, IS professionals must demonstrate people skills if they expect to win a new position or land a promotion.

Not just the icing

IS managers say people skills, once a nice extra in the IS world, are now a core requirement. Managers are on the hunt for people who can interact well with users, understand business issues, explain processes clearly and concisely, listen carefully and foster partnerships with colleagues and users.

"We are looking for people who can work hand in hand with the people in business areas," says Bob Typanski, manager of data access services at Bayer, Inc. in Pittsburgh. "We are looking for people who haven't been just programmers."

When it comes to these soft skills, there are two potential snags for many IS professionals. First, people skills are not always easy to demonstrate. Second, people skills, to a great extent, are an outgrowth of personality. Some people are just more outgoing than others.

But hiring managers and consultants say there's good news on both fronts. To begin with, managers say there are no big secrets in demonstrating soft skills. They say the winning approach is to stay focused on how the IS process affects users, the organization and the business overall. They also insist that basic people skills can be developed — even by classic IS nerds.

For IS professionals in the job market, the key to selling soft skills comes down to the job interview. Work experience that is focused on people and organizational issues, such as team management or any end-user support position, obviously helps. But hiring managers say the way job candidates describe their experiences is as important as the experience itself.

Winning answer

To illustrate the point: Say two job applicants have been IS team leaders. In an interview, each is asked to discuss a project that the team completed. The first applicant talks about the work itself — the coding, the deadlines, the actual system the group developed. The second candidate discusses the system and also summarizes how he assembled the team, worked to build morale and got the team working as a cohesive unit.

"The conversation can tell you if they've had experience building teams, including complex teams with a lot of interpersonal issues. It will give you an idea of how sensitive they are."
— Tom Vines, Cigna

The two applicants are both highly qualified. But the second one demonstrated a sensitivity to people and organizational issues. The first applicant missed that boat entirely.

"When I ask a person to describe something, such as 'What course did you like and why,' and they just say, 'Taxes. Got an A,' that is not the way to answer that question," says Mike Huiatt, manager of financial systems administration at Tesoro Petroleum Corp. in San Antonio.

Instead, Huiatt wants to listen to people talk so he can get a glimpse of who the person really is. "They don't have to be the most polished," he says. "They do have to have communication skills."

At Cigna, Vines says he will ask questions as direct as: "Give me an example that demonstrates your self-confidence."

In fact, Cigna is working with a redesigned interview process that reflects this need for communications and other nontechnical skills. The Philadelphia-based company, which started the project two years ago, now works with a "leadership competency model" that helps hiring managers evaluate IS candidates based on a series of required skills. These include self-confidence, analytical thinking, organizational awareness, organizational commitment and interpersonal understanding.

Managers say the first step is to make a concerted effort to pay attention to people at work — colleagues as well as end users. That sounds insultingly obvious, but managers say many IS professionals are so caught up in their techie worlds that they can truly be unaware of organizational issues around them.

Learn from others

Other recommendations from managers include training classes, seminars and adult education courses that focus on personal dynamics, relationships and public speaking. And one tactic that doesn't cost a dime: Ask a manager to identify someone on staff they think is a strong communicator. Then watch that person and do your best to imitate him.

Take the case of Phil Webster, a self-described techie who is MIS manager at Accugraph Corp., a software company in El Paso, Texas. Webster was promoted to his current post in 1994 despite being "very green," he says. "I didn't have much knowledge on how to actually deal with people."

But throughout 1995, Webster says he practiced the basics — letting people speak before he responded, listening carefully, learning to explain an IS plan without the jargon and "learning to say no politely."

"He's blossomed beyond a techno-guy," says Dennis McGinn, CEO at Accugraph. "It's an issue of trust. You need someone who can help you. You need someone who is a consultant to you, not just someone who is going to wire something into the wall."

Webster was reluctant to pat himself on the back, but he did note that he is "more polished" now. "You need to listen to your own emotions and try to listen to others," he says.

"When you have an effect on someone, try to understand what went wrong and try not to let things fester. There will always be people that you don't get along with, but you try to get along, for the good of the company." ●

Cafasso is a freelance writer in Walpole, Mass.

Soft in the head?

Soft skills hiring managers look for

- Willingness to listen.
- Ability to explain an IS process concisely.
- Ability to discuss issues; degree in nontechnical subjects such as marketing a plus.
- Ability to discuss technology in nontechnical terms.
- Ability to convey knowledge of business issues.
- Demonstrated ability to resolve conflict.
- Desire to adapt and be flexible to end-user requirements.

Source: IS managers and industry consultants

I'm sorry, that answer is incorrect

IS managers and consultants say it's amazing how badly some folks can behave in an interview.

Andy Gale, chief operating officer at Lands Corp. in Portland, Ore., still remembers his search for an IS manager five years ago. One fellow, he says, "was just an absolute piece of work." He bragged in the interview about his intelligence and then "went behind my back and contacted our [hardware] supplier and told them he was our finalist." That maneuver cost him the job.

Michael Foley, a regional recruiting manager at The Registry, a consulting and job placement firm in Newton, Mass., recalled one job candidate who couldn't keep his mouth shut. "I could not get a word in," Foley says. "He was interrupting me when I was talking. My interpretation was [that] if I put him on a project, he would do that. That wouldn't fly at all."

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SOFTWARE ENGINEER required. System design, software development & applications testing on UNIX & PC platforms including extensive coding in C++, Shell Programming & development of Object Oriented & Relational database. Design GUI's using X-Windows, PowerBuilder & Visual Basic & knowledge of 2 & 3 dimensional computer graphics. Develop Client/Server applications using UNIX Interprocess Communications (IPC) & concurrent processing techniques. Masters Degree or its equivalent required in Math, Computers or Engineering, plus 1 year experience in the job duties described above. University work experience (other than classroom study) may be used to satisfy the experience requirements. Must have proof of legal authority to work in the U.S. Salary $41,000/year for a 40 hour work week. Apply at the Texas Employment Commission, Fort Worth, Texas, or send resume to the Texas Employment Commission, TEC Building, Austin, Texas 78778-0001, J.O. Number TX7505277. Ad paid by an Equal Opportunity Employer.

SOFTWARE ENGINEER. (2 positions) 40 hrs/wk. 8 a.m. - 5 p.m., $66,000/yr. Carry out the systems analysis, systems design, coding and testing of computer software application systems on IBM mf environment utilizing IDMS and COBOL. Req: Bachelor's degree in Computer Science or Electrical or Mechanical Engineering or equivalent.* "Equivalent includes 8 yrs. of exp. in job offered or related occupation, in lieu of bachelor's degree and 4 yrs exp. in job offered or related occupation. Req: 4 yrs. exp. in job offered, or 4 yrs. exp. in Systems Analysis &/or Programming &/or Software Engineering &/or Computer Consulting. Req: work exp. in dev. of s/w systems on IBM mf and with COBOL and IDMS (or DB2 or IMS-DB) s/w. Employer is a s/w development/consulting firm. Relocation to client sites throughout the U.S. for periods of 6 mos. to 2 yrs. required. "Employer paid ad." E.O.E. Send resumes to: 7310 Woodward Ave., Rm. 415, Detroit, MI 48202. Ref. No. 42886.

Consultant, 40hrs/wk., 8am - 5pm, $41,600/yr. Design, development, implementation & testing of software for business & scientific applications. Systems administration. Tools: UNIX/AIX; VAX/VMS; MS-Windows; Sun-OS; MS-DOS; TCP/IP; C; C++; M.S. in Computer Science as well as two years experience in job offered or as Programmer Analyst required. Previous experience must include: systems administration; C; UNIX; VAX/VMS. Graduate education must include one design project using C++. Must have proof of legal authority to work permanently in the U.S. Send two copies of cover letter & resume to: ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street - 3 South, Chicago, IL 60605. Attention: Janet Aschenbrenner. Reference #V-IL-14796-A. NO CALLS. An Employer Paid Ad.

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Project Leader, 40hrs/wk, 8am - 5pm, $42,500/yr. Lead projects in the design & development of employee scheduling packages for the retail industry. Apply intelligent optimization techniques. Modify/port backend database engine & design graphical user interface as front-end using object-oriented methodology. Tools: Windows, MS Visual C++, C/UNIX. M.S. in Computer Science or Mathematics as well as two years experience in job offered or as Systems Architect required. Previous experience must include software development with Windows & C/UNIX. Graduate education or experience must include Computer Graphics, Computer Communication Networks, one project on object-oriented database. Must have proof of legal authority to work permanently in the U.S. Send two copies of cover letter & resume to: ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street - 3 South, Chicago, IL 60605. Attention: Lan Bokaa. Reference #V-IL-14605-B. NO CALLS. An Employer Paid Ad.

PROGRAMMER/ANALYST (2 positions) 40 hrs/wk. 8 a.m. - 5 p.m. $41,610/yr. Carry out the systems analysis, systems design, coding and testing of computer software application systems on IBM mainframe utilizing COBOL and a database (DB2 or IMS/DB or ADABAS), and EASYTRIEVE. Employer is a s/w development/consulting firm. Relocation to client sites throughout the U.S. for periods of 6 mos. to 2 yrs. required. "Employer paid ad." E.O.E. Send resumes to 7310 Woodward Ave., Rm. 415, Detroit, MI 48202. Ref. No. 22296

PROGRAMMER/ANALYST (2 positions) 40 hrs/wk. 8 a.m. - 5 p.m. $42,840/yr. Carry out the systems analysis, systems design, coding and testing of computer application systems on IBM AS/400 environment utilizing RPG/400, CL/400 and QUERY/400. Req: Bachelor's degree in Computer Science or Electrical or Mechanical Engineering. Req: 2 yrs. exp. in job offered, or 2 yrs. exp. in Systems Analysis &/or Programming &/or Computer Consulting &/or Trainee. Req: work exp. in dev. of s/w systems on IBM AS/400 environment with RPG/400, CL/400 and QUERY/400. Employer is a s/w development/consulting firm. Relocation to client sites throughout the U.S. for periods of 6 mos. to 3 yrs. required. "Employer paid ad." E.O.E. Send resumes to: 7310 Woodward Ave., Rm. 415, Detroit, MI 48202. Ref. No. 19996.

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Please send resume with cover letter that most outline how you meet each criteria listed above to: VHA Inc., Attn: Req #CT or PE, P. O. Box 140909, Irving, TX 75014 or fax to (214) 830-6195. For information on other available positions call our 24-hour jobline at (214) 830-6777.

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Creates, manages and supports all physical Development and Lab database software and hardware resources including databases and database servers; manages database use and content in support of applications development; monitors database growth, usage and performance; and provides technical support to application and system developers for both logical and physical database design and implementation. Must have 8–10 years of directly related experience, preferably database administration and/or design in a large distributed system. Minimum of 5 years' experience with database design and tuning, preferably Sybase (System 10 preferred) in a VAX/VMS or UNIX environment in large, distributed DSS and OLTP processing or data warehousing. **Job Code 11035096**

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The ideal candidate should possess a BSCS or an Asian Studies degree with a Computer Science minor. Should be fluent in reading and speaking Japanese. Knowledge of localization tools and techniques and familiarity with graphics software required.

Micrografx has also designed a competitive salary and benefits package which includes a casual work environment. Please send your resume to: Micrografx, Attn: Human Resources, 1303 Arapaho Rd., Richardson, TX 75081. FAX (214) 994-8036. Email: hr@micrografx.com. No phone calls, please. An Equal Opportunity Employer

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SCB Computer Technology, Inc., a National Systems Integrator/Information Management Consulting Services Firm has immediate long-term opportunities throughout the country for Programmers, Analysts and Consultants.

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Programmer/Analyst: Responsibilities will include application programming, program design, documentation, implementation, debugging, windows programming maintenance, analysis and code enhancements, Local Area Network system administration, network setup and hardware trouble shooting, relational database design and implementation. Will survey, install new software. Will consult with user to identify current operating procedures and clarify program objectives. Will perform the full cycle of software development from requirement specification, prototype, design, implement, testing/debugging and software maintenance. Must have Master Degree in Computer Science. Education to include completion of one course in each of the following: Software Engineering, oo-oriented Lang & Envs, Query Process D-Base System, and Adv Computer Architecture. 40 Hours per week, 9:00 a.m. - 5:00 p.m. & 1& 00 per hour. Must have proof of legal authority to work permanently in the U.S. Report to ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street - 3 South Chicago, Illinois 60605 Attention Len Sokas, Reference # V-IL 14473-B AN EMPLOYER PAID AD. NO CALLS - SEND 2 COPIES OF BOTH RESUME & COVER LETTER.

IEF DATA ANALYSTS (two openings). Analyze business needs and requirements to produce normalized data models for large IBM computer systems. Use Information Engineering Facility (IEF) CASE technology to develop data models, design specifications and data flow diagrams, analyze modification requests, determine system design feasibility and perform cost/benefits analysis; and, evaluate application integrations. Participate in proposal development, in-house trainings, and client presentations related to IEF analysis.

Req: bachelor's degree in information systems, computer science, mathematics, or business administration. Minimum two years of experience as a Data Analyst using CASE tools. Experience must include using IEF CASE technology developing data models, designing specifications and data flow diagrams; structured analysis and structured design; and client presentations and/or trainings.

Special requirements: Position arises throughout the U.S., present base is in Minneapolis, but applicant must be willing to extensively travel throughout the U.S. at company expense. $52,000/year. Send copy of this advertisement with two copies of resume to Case #51421, P.O. Box 8968, Boston, MA 02114.

Programmer/Analyst (Engineering & Scientific). 40hrs/wk, 8-5, $38,000/yr. Computing consulting & support with various industries. C, Oracle software building on UNIX multitasking computer systems using Client Server technology. Use C/C++ LAN, X-Windows/Motif, MS-Windows to develop graphic animation & system applications. Write programs using SLC, PLC series software packages to perform process control, material transfer, scaling, & sequential control. PowerBuilder/FoxPro application development. Use PowerBuilder with SQL Server to write/test database applications in Window environments, & FoxPro to generate Financial Reporting Systems with Window environments. Min reqs: MS in Computer Science. 1 yr in carrying out those duties set forth in the job offered or (yr in computer consulting, in C, ORACLE software building on UNIX multitasking computer systems., in using C/C++ LAN, X-Windows/ Motif, MS-Windows, & in writing SLC/PLC series program software packages (to include therein 1/2 yr in PowerBuilder/ FoxPro application development. Apply at the Texas Employment Commission, Houston, Texas, or send resume to the Texas Employment Commission, TEC Building, Austin, Texas 78778, J.O # TX7504643. Ad Paid by an Equal Opportunity Employer

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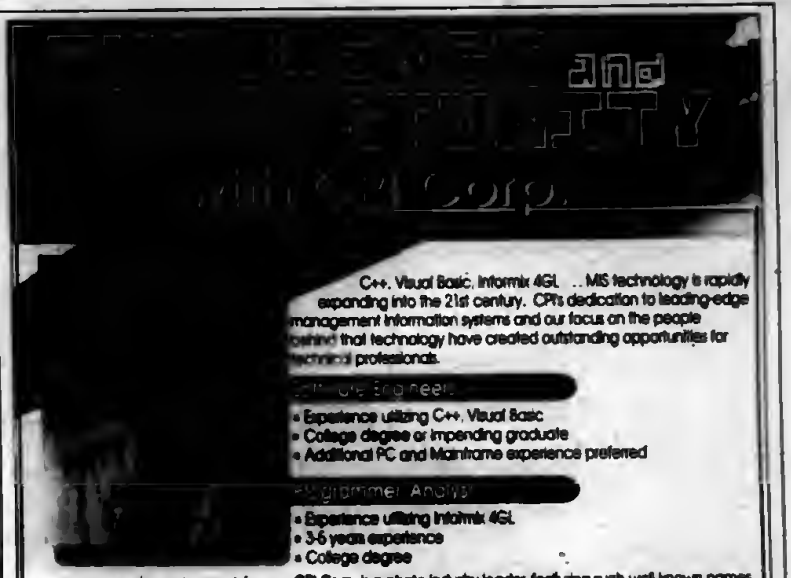
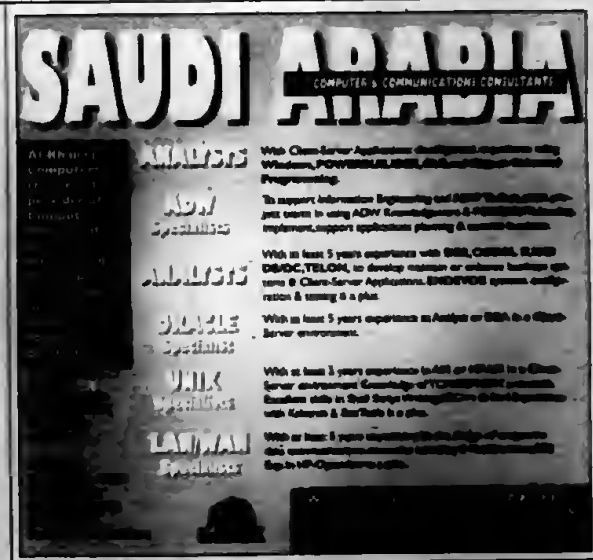
Network Support Analyst Supervisor - Supervise & coordinate activities of workers who provide problem-solving support to comp users; assist in solving nonroutine s/w, h/w & procedure problems using computers & manuals; talk to staff, comp users, supervisors & managers to determine req's for new or modified s/w & h/w; coordinate installation of h/w & s/w & implementation of procedure changes; configure, install & support all h/w & s/w involved in a fiber backbone servicing two buildings containing five local area networks; configure & support six PC3270 & three SAA gateways & two NetWare Connect servers; install & configure world wide web browsers including NetScape & Mosaic; install, configure & support FTP & Novell's TCP/IP s/w utilizing applications such as ftp, telnet & WWW browsers; act as liaison between customers & the Internet Register; install configure & support h/w & s/w for a global human resource data base involving ten foreign countries & up to 500 client PCs; support 30 user OS/2 environments; support user migrations from OS/2 to a Novell environment; support CD-ROM needs; & perform h/w upgrades. Reqs: Master's in Computer, Electrical or Electronic Engg. & 2 yrs. exp. in the job offered or 2 yrs. exp. in related occup as a Network Specialist or Customer Support Engineer. & ones related exp. including each of the following: Connecting bridges & hubs in Token Ring network; developing access to Gopher, Telnet, FTP & Netscape through the Internet using TCP/IP protocol; providing technical support for day-to-day LAN operations including troubleshooting to determine if problems are h/w, s/w or network related; installing CD-ROMs on network using Novell SCSI Express s/w; installing & configuring Novell Netware v2.15 & v3.12; & working on Token Ring & Ethernet platforms using CSMA/CD, OSI & IPX. $41,986.28/yr., 40 hrs/wk, 8a-5p, M-F. Send resumes to 7310 Woodward Ave. Rm 415, Detroit, MI 48202 & include Ref. #26296. Employer Paid Ad.





Systems Analyst. 40 hrs/wk, from 9am to 5pm. Salary at $45,000/yr. Job duties to include analysis, design, development of software using AS/400, RPG/400, SYNON/2E version 4.0. Train end users. User support and advice. Require 2 year experience in job offered. Must have worked on projects developed on AS/400 using RPG/400 & SYNON/2E version 4.0. Must have proof of legal authority to work permanently in the U.S. Please send resumes to Illinois Department of Employment Security, 401 South State Street - 3 South, Chicago, Illinois 60605. Attention: Len Sokas, Reference #V-IL 14252-B. An Employer Paid Ad. No Calls. Send 2 copies of both resume and cover letter.

Software Engineer: Analyze/design/dvlp large-scale data intensive share systs using object oriented methodology for communication & (inter) environments. Analyze need for networking technologies, design syste specs, dvlp syst requirts & systems syst. Work performed in client/server, on-line & networking environts extensively use of MS Windows, OS/2, C/C++, Visual C++, Windows based database tools, Novell & LU6.2. Reqs: Masters-Comp Sci, Math or Engg + 4yr exp in duties. 40hr 9a-5p $47K/yr. Must have proof of legal auth to work permanently in US. Send 2 copies of both resume & cover letter to Illinois Dept of Employment Security, 401 S. State St-3 South, Chicago, IL 60605 ATTN: Brenda Kelly Ref#: V-IL 14864-K. An Employer Paid Ad. No Calls.

Programmer/Analyst (Varying client job sites in Dallas/Metro, Texas). Dev. & programming of financial & administrative applications on/under systems in NATURAL/ADABAS, employing PREDICT Data Dictionary, COBOL & JCL. Testing & modification of system per client specifications. 2 yrs. exp. in job offered. $48,928.00/yr. 40 hrs./wk., M-F, 8-5. Apply at the Texas Employment Commission, Dallas, Texas or send resume to the Texas Employment Commission, TEC Building, Austin, Texas 78778, J.O. #TX7504880. Ad paid by an equal opportunity employer.

Information Systems Maintenance Manager

Purdue University North Central is seeking an IS Maintenance Manager to supervise our campus-wide computer maintenance operations, for PCs, Macs and related peripherals in all computer labs and campus offices. Duties include, but are not limited to, the supervision and training of maintenance technicians in the areas of equipment and software, managing the Computing Center Support Desk and maintenance related databases, and leading in the development of computer/software standards. Required Quals: BA/BS, 5-10 years experience in technical equipment maintenance and 5 years supervisory experience, a passion for quality customer support. Degree in a technology field preferred.

To apply, please fax, e-mail or snail-mail your cover letter, resume, salary history, and the names and phone numbers of three professional references to Ms Olson, Director, Personnel Services, Purdue University North Central, 1401 South U.S. Highway 421, Westville, IN 46391. Fax (219) 785-5545. E-mail: [illegible]

Salary DOE. Excellent fringe benefits. Review of applications materials will begin on March 29, 1996 and position will remain open until filled. Educational and professional refer-ences will be verified prior to any offer of employment.

Purdue University North Central is an equal opportunity, affirmative action employer, and encourages minorities, women and individuals with disabilities to apply.

Operating System Analyst: Develops modifies, and administers a multi-platform computer operating systems including Sun workstations installed in a UNIX server (operating) system, Windows-based personal computer systems installed in a network environment and Macintosh computers installed in an Apple-Talk network environment. Performs system configuration and network communication problems to allow access to various academic research tools for biomedical research within a university network environment as well as creating access to various internal databases. Performs network systems administration using TCP/IP protocol and Apple Talk networking device to insure system file sharing capabilities. Formulates and designs complex solutions for computer-aided solutions for academic research including establishing parameters for remote access, image acquisition and editing and enrich patterns based on required biomedical, research topics. Requires: Bachelor's degree in any field of study. Also requires two years experience in the job to be performed or two years as a Computer Lab Coordinator or Computer Lab Manager. Academic, if experience in related field, entire experience must include performance of all tasks specified in the job to be performed. Education to include completion of one course in each of the following: Quantitative Research Methods, Network Analysis, and Statistical Methods of Research. Hours: 9:00 a.m. - 5:00 p.m. 40 hours per week at $38,000 per year salary. Must have proof of legal authority to work permanently in the U.S. Please send resume to Executive Administrator, Jamie Caldwell, Ben May Institute, University of Chicago, 5841 South Maryland Avenue, Chicago, Illinois 60637. No Calls.

Programmer Analyst - Plan, develop, and document computer programs, applying knowledge of programming techniques & computer systems, evaluate user request for new or modified programs to determine feasibility, cost & time reqd, compatibility with current system & computer capabilities; consult with users to clarify current operating procedures & clarify program objectives, develop client-server applications using ORACLE, ERWIN, PowerBuilder, ARCserve, Novell Netware, ORACLE RDBMS, SQL*FORMS 3.0, ORACLE CASE tools, PL/SQL, PROC & Visual Basic. Reqs: Bachelor's in Computer Science, Systems Analysis, Computer Information Systems, Computer Engineering, Electrical Engineering, Electronic Engineering, Mathematics or as equivalent in education & exp. 1 year exp. in job offered or 1 yr exp. in related occup. as a Programmer, Programmer Analyst, Systems Analyst, Software Engineer or Consultant, will accept 3 yrs. of college ed. plus 3 yrs. exp. in the job offered or in a related occup. in lieu of the reqd. ed. & exp. Must have proof of legal authority to work in the U.S. $38,000/yr. 40 hrs/wk 8a-5p M-F. Work at various unanticipated locations throughout the U.S. Application is by resume only. Send resumes to Colorado Dept. of Labor & Employment, Employment Programs, ATTN: Jim Shimada, Tower 2, Ste 400, 1515 Arapahoe St, Denver, CO 80202-2117 & refer to order number CO 446 5498.

Programmer Analyst - Plan, develop, test & document computer programs, applying knowledge of programming techniques & computer systems, evaluate user request for new or modified programs to determine feasibility, cost & time reqd, compatibility with current system & computer capabilities; consult with users to clarify current operating procedures & clarify program objectives. Develop client-server applications using ORACLE, ERWIN, PowerBuilder, ARCserve, Novell Netware, ORACLE RDBMS, SQL*FORMS 3.0, ORACLE CASE tools, PL/SQL, PROC & Visual Basic. Reqs: Bachelor's in Computer Science, Systems Analysis, Computer Information Systems, Computer Engineering, Electrical Engineering, Electronic Engineering, Mathematics or as equivalent in education & exp. 1 year exp. in job offered or 1 yr exp. in related occup. as a Programmer, Programmer Analyst, Systems Analyst, Software Engineer or Consultant, will accept 3 yrs. of college ed. plus 3 yrs. exp. in the job offered or in a related occup. in lieu of the reqd. ed. & exp. Some of the related exp. which included developing, enhancing & maintaining software & using each of the following: Microsoft Windows, Microsoft Visual C++, Microsoft Foundation Class Library, SIT, SQML, & SDK. Must have proof of legal authority to work in the U.S. $35,000/yr. 40 hrs/wk. 8a-5p M-F. Work at various locations throughout the U.S. Application is by resume only. Send resumes to Colorado Dept. of Labor & Employment, Employment Programs, ATTN: Jim Shimada, Tower 2, Ste 400, 1515 Arapahoe St, Denver, CO 80202-2117 & refer to order number CO 446 5538.

Programmer Analyst (2 openings) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to client needs, analyze, design & develop computer software for clients EDP systems, convert data from existing system to in-house health care system, improve performance of major batch reports & develop reports for management & marketing using LINC II, UNISYS DMS II, & COMS. Reqs: Bach in Comp. Sci., Electrical Electronic or Computer Engg. Systems Analysis & Comp. Info. Systems, Math or equiv. in ed. & exp. 3 yrs. exp. in job offered or 3 yrs related exp. such as Systems Analyst, Programmer, Software Engineer, Consultant, Analyst/Programmer or Project Leader. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of reqd. ed. & exp. Must have exp. in development & system implementation, enhancement & maintenance of applications using Unisys, LINC II, COBOL, CON & DMS II; $48,000/yr. 40 hrs/wk 8a-5p. Send resume to 7310 Woodward Ave., Room 415, Detroit, MI 48202. Ref #43596 "Employer Paid Ad"

Programmer Analyst - Plan, develop, test & document computer programs, apply knowledge of programming techniques & computer systems, evaluate user request for new or modified program, determine feasibility, cost & time reqd, compatibility with current system & computer capabilities; consult with user to identify current operating procedures & clarify program objectives; formulate plan outlining steps reqd to develop program using structured analysis & design; convert project specifications using flowcharts & diagrams into sequence of detailed instructions & logical steps for coding into language processable by computer. Responsibilities include developing, enhancing & maintaining software using Microsoft Windows, Microsoft Visual C++, Microsoft Foundation Class Library, SIT, SQML, SDK & C. Reqs: Bachelor's in Computer Science, Systems Analysis, Computer Information Systems, Computer Engineering, Electrical Engineering, Electronic Engineering, Mathematics, or its equivalent in ed. & exp. & 2 yrs exp. in job offered or 8 yrs. exp. in related occup. as a Programmer, Programmer Analyst, Systems Analyst, Software Engineer or Consultant, will accept 3 yrs. of college ed. plus 3 yrs exp. in the job offered or in a related occup. in lieu of the reqd. ed. & exp. Some of the related exp. which included developing, enhancing & maintaining software & using each of the following: Microsoft Windows, Microsoft Visual C++, Microsoft Foundation Class Library, SIT, SQML, & SDK. Must have proof of legal authority to work in the U.S. $35,000/yr. 40 hrs/wk. 8a-5p M-F. Work at various locations throughout the U.S. Application is by resume only. Send resumes to Colorado Dept. of Labor & Employment, Employment Programs, ATTN: Jim Shimada, Tower 2, Ste 400, 1515 Arapahoe St, Denver, CO 80202-2117 & refer to order number CO 446 5538.

GLOBAL NETWORK MANAGER. Responsible for the performance management, security and operation control of Global Information Network. Supervise the activities and plan the workloads of Data Analysis and Data Entry Personnel. Direct the acquisition, installation, and maintenance of network hardware and software standards, procedures and appropriate utilization of Global Information Network. Duties entail work with WAN, LAN, Routers and Gateways, X.25, TCP/IP Network Traffic Analysis and Control, OSI Standards and Protocols. Requires: B.S. in Computer Information Management, Computer Science or related field. Must have two years experience in the job offered or two years as a Programmer Analyst or Systems Analyst. Two years of experience must involve use of WAN, LAN, Routers and Gateways, X.25, TCP/IP Network Traffic Analysis and Control, OSI Standards and Protocols. 40 Hrs/Wk. Hrs 8:30-5:00. OT N/A. $45,000/yr. OTS N/A. Must have proof of legal authority to work permanently in the U.S. Applicants send resumes to: ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street, 3 South, Chicago, IL 60605. - Attention: RUTH DANIELS. Reference # V-IL 14277 R. AN EMPLOYER PAID AD. NO CALLS. SEND 2 COPIES OF BOTH RESUME & COVER LETTER.

SYSTEMS ANALYST to provide specialized computer consultancy service to analyze, design, develop, test and implement OS/2 client server software applications on IBM3090 mainframe RS-6000 and PC hardware perform object oriented design in client server environment and architectural design using relational database: DB2, CICS, XDB, Bitx Oracle OS/2, C++, Microfocus Dialog and communications and operating system software (Communications Manager GPF, LAN, DOS and Oracle CICS). Require B.S. in Computer Science/Engineering and two years experience in the described job duties. Experience must include at least one year of client server applications and object oriented design using DB2 Oracle OS/2 and C development in the utility industry. 50% travel required within the United States. Salary $45,000 per year, 8 am to 5 pm, M-F. Send resume with Social Security number to the Indiana Department of Workforce Development, 10 N. Senate Avenue, Indianapolis, IN 46204-2277. Attention Gene P. Replogle. Job Order #3379651

Software Engineer: Develops and designs controller software in a real-time embedded system which will be implemented in a real-time multi-tasking cable television head-end controller system software. Develope and designs appropriate graphic user interfaces for cable system. Integrates and modifies a multi-threaded based application software to establish data communication links between local and network controllers using HDLC protocol and cable encryption encoding algorithms in a real-time environment. Requires Master's degree in Software Engineering, Electrical and Computer Engineering, or Electrical Engineering. Education to include completion of a Master's thesis using real-time digital signal encoding algorithms to develop an audio and video signal processing system. Education to include completion of two courses in which the individual used HDLC communication protocols for data transmission and completion of one course in the application of television technique for software engineering. Hours: 9:00 a.m. - 5:00 p.m. 40 hours per week at $40,000.00 per year salary. Must have proof of legal authority to work permanently in the U.S. Please send resume to: Salaried Personnel, Attn: Brian J. Zorz, Zenith Electronic Corporation, 1000 Milwaukee Avenue, Glenview, Illinois 60025. No Calls.

Software Engineer: Design develop, install & configure software products & systems design new directions for printing spool files from AS/400 to other systems, install systems & configure network software, manage Net/Wrk product development, port networking series of products to RS/6000 platforms running AIX, HP-9000s & HP-UX, write shell scripts & API's (Application Programmer's Interfaces) in C for the Net/Wrk 6000 product on RS/6000 while GUI's (Graphical User Interfaces) using XVT & testing for compatibility with the RS/6000 platform, responsible for system security, backups & restoration of system on RS/6000 & HP-9000 platforms. $45,000/yr. 40 hrs/wk. M-F U.S. or foreign equivalent. B.S. in Computer Sc. or Computer Eng. & 2 yrs. exp. as Software Eng. or System Analyst. Exp. must include use of AS/400, RS/6000, AIX, HP9000, HP-UX, XVT & C. Must have proof of legal authority to work permanently in the U.S. Send 2 copies of cover letter & resume to the IL Dept. of Employment Security, 401 South State St., 3 South, Chicago, IL 60605. ATTN: Leila Jackson. REF. #V-IL 31869-J. An Employer Paid Ad. No Calls.

We are a nationally recognized top-ten public hospital committed to excellence in our care of patients and our employees. If you are highly motivated and interested in being part of our IS team, please read on!Currently we have several positions open in our Information Systems department:

- **MANAGER - CLINICAL INFORMATION SYSTEMS**
  Position requires a college degree with 8 yrs. of practical experience, or 10 yrs of practical exp. in managing a professional staff in the acquisition of information systems to serve clinical setting. Experience in a large public hospital a plus.
- **SYSTEMS ANALYST II - CLINICAL APPLICATIONS**
  Position requires a college degree and at least 1 yr. experience in implementing and supporting Clinical application (Lab, Radiology, Pharmacy, Respiratory, Surgery) The successful candidate must be familiar with functional working of Clinical department in a large setting, and assist in the implementation of new software and the development of interface specification. Refer to job 5682RX-1
- **COMPUTER ASSISTANCE REPRESENTATIVE SUPERVISOR**
  Must have Bachelors degree in Computer or Information Science with 6 yrs. supervisory exp. in customer service or related field, or 8 yrs. supervisory exp. in customer service or related field. Refer to job A166JC.
- **COMPUTER ASSISTANT REP**
  Position requires one or more years exp. in technical customer service, excellent communication, inter-personal and problem resolution skills. Demonstrated competence in PC Base applications such as Quattro Pro, WordPerfect, Word, Excel etc., as well as networked applications in a client-server and mainframe environment a definite plus. Refer to job A165ED
- **LAN ANALYST**
  Position requires experience as a Novell analyst with exp. in the installation of 4.x servers and/or CNE a plus. Experience with Novell manageWise a definite plus. Refer to job A161CP
- **DATA BASE ADMINISTRATOR**
  Must have a Bachelors degree in Computer Science or related discipline plus six years experience as a Data Base Administrator in an MVS with IMS or CICS/IMS environment having responsibility for generating and maintaining database operating environment and associated database enhancements such aw IMS DBCTL, Fast Path and BMP. OR, must have 10 years of equivalent experience and education. Refer to job A029PI
- **DATA BASE ANALYST II**
  Bachelors degree plus a minimum of 4 years experience with IMS, CICS, DBRC, and DBCTL within an MVS environment. Must have experience in performance tuning, backup/recovery supporting the IMS database structure. Must be proficient in application coding utilizing ALC and/or COBOL, CICS, and DL/I. Refer to job A030PI
- **SENIOR SYSTEMS ANALYST**
  Bachelor's degree plus 5 yrs. exp. as a systems analyst or seven years exp. as an analyst. Must have analytical exp. with analysis, general design, detail design, and implementation activities, along with excellent writing skills. Prefer knowledge of PCs relational databases and client/server architecture preferred. Refer to job 5681OH

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Computer Systems Analyst, design and devel an asset mgmt syst to track PC/LAN event, create data storage and retrieval formats using ORACLE 7.1, design data entry forms and create reports using V.B.3.1 ORACLE Reports, and Crystal Reports, use TCP/IP and SQL*NET over Novell net, in DOS/Windows and UNIX, use SQL*Plus, PL/SQL and related SQL tools, provide daily support for Clientele software using Clientele Basic 1.1, MIN QUAL. M.S. - Comp Sci, 2yrs exp as Computer Consult./Analyst, exp must incl. ORACLE 7.x and related SQL tools, Visual Basic 3.x, Crystal Reports/ORACLE Reports, Access, and C++. M-F, 8am-5pm. $52,000/yr; Employer Paid Ad. Send resume to: MESC, 7310 Woodward Ave., Rm 415, Detroit, MI 48202. Ref#41095.

Systems Analyst - Analyze user reqs, design, develop, implement Info. Mgment Systems on IBM/MVS hardware using DB2, CICS, and COBOL. Define and establish DB2 database structure. Develop program specs and systems docs. Test, debug and enhance existing systems and programs. 40 hrs./wk; 8:30AM-5:00PM. $45,000/yr. Req: Bach in Comp. Sci, Math or any Engineering & 2 yrs. exp. which includes 1 yr exp. in client/server environment using OS/2 & EASEL. Must have proof of legal authority to work permanently in the US. Send resumes to: ILLINOIS DEPARTMENT OF EMPLOYMENT Security, 401 South State Street-3 South, Chicago, Illinois 60605. Attention: Ruth Daniels. Reference # V-IL-14142-R. NO CALLS. AN EMPLOYER PAID AD. Send 2 COPIES OF BOTH RESUME AND COVER LETTER.

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Systems Analyst/Programmer. 40 hr/wk from 8am to 5pm. Salary of $45,000/yr. Job duties to include design and development of financial applications such as General Ledger, Account Receivable and Account Payable. Require Bachelor Degree with Computer Science or Management as major and 1 year experience in job offered or as Systems Engineer using ORACLE 6.0, SQL*Forms 3.0, SQL*Report Writer 1.1, Pro*C and COBOL. Must have proof of legal authority to work permanently in the U.S. Please send resume to Illinois Department of Employment Security, 401 South State Street-3 South, Chicago, Illinois 60605. Attention: Brenda Kelly. Reference #V-IL 13991-K. An Employer Paid Ad. No Calls. Send 2 copies of both resume and cover letter.

KCS Computer Services is a premiere system integration, training, and custom software development organization. KCS is seeking Systems and Data Architects, Analysts, Programmers, and Communications Experts in Mainframe and Client/Server environments. In addition, KCS seeks industry experts in Banking, Healthcare, Manufacturing, and technical experts in Multimedia and Microtrak. The following are typical skills required:

- UNIX/OS2/NT/NOVELL
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- VISUAL BASIC/VISUAL C++ POWERBUILDER/C++
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- COBOL/CICS/NATURAL
- IMS/DB2

KCS has offices in Pittsburgh, Philadelphia, Atlanta, Phoenix, Cleveland, and San Francisco.

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PROGRAMMER ANALYST. Plans, develops, test, and documents computer programs, applying knowledge of programming techniques and computer systems. Performing feasibility studies. EDP requirement analysis: review, evaluate and suggest modifications to client requests; Design input and output layouts; prepare system and program specifications, plans, develops, defines programs and systems, writes detailed operating procedures, database design and system flow-charts; prepare and plans and and data, programming, testing and documentation; assist the users in migrating to new application. The above applications will be performed using IBM mainframes and its utilities particularly MVS, DB2, CICS, COBOL and IEF CASE tool and analysis, design and development **REQUIREMENTS.** Bachelor's Degree in Computer Science or math-related and two years' experience required, including 2 years experience IEF CASE tool Must be able to travel. **SALARY:** $48,000/year Qualified applicants submit resume to GEORGIA DEPARTMENT OF LABOR, JOB ORDER NO 5668518, 465 BIG SHANTY ROAD, MARIETTA, GEORGIA 30066-3303, or the nearest Department of Labor Field Service Office.

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Logica provides services across the spectrum of the communications industry, from Regional Bell Operating Companies to cable companies or wireless communication vendors. Logica's expertise covers the full service network including: network infrastructure, customer care and billing, and value-added services.

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Logica tackles technical problems that others shy away from. We work with major technology vendors in the design and development of their software and operating systems. Our expertise includes operating systems development, cross-platform integration, messaging middleware, video and voice technologies.

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We provide systems integration, consulting and software development services to the telecommunications, multimedia, financial services, IT and utilities industries. With $400 million in annual revenue and nearly 4,000 employees, Logica has completed over 10,000 projects in more than 50 countries. For more than 25 years, we have provided services which enable our customers to meet present and future business needs through technology.

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We are looking for highly respected and experienced architects with expertise in at least one of the following disciplines:

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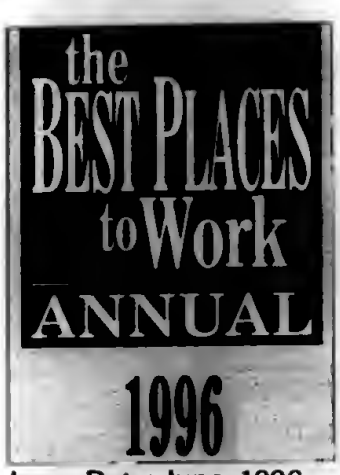

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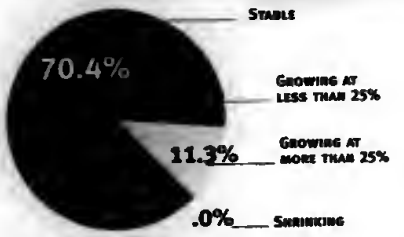

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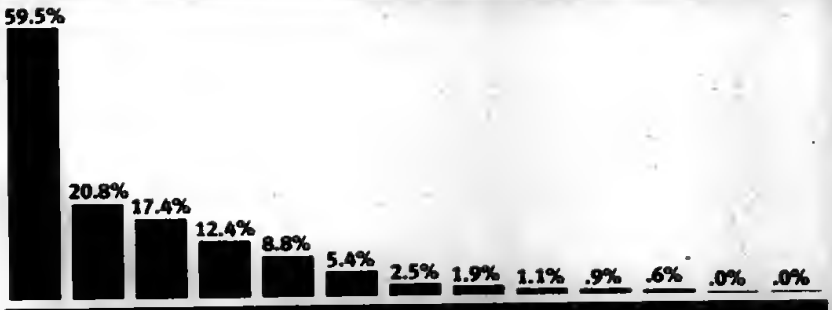

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Marketplace

Attendees to scout out NT, ATM and the Internet

NETWORLD+INTEROP 96

By Lynn Haber

Every day, companies bet their business on their networks. That's why more than 50,000 information technology professionals are expected to gamble on the Networld/Interop '96 conference and exposition, to be held this week in Las Vegas.

Gurus of the computer and telecommunications industries will address networking issues and concerns that range from the desktop to the LAN, the WAN and the information superhighway.

The conference portion of the event centers on five subjects: computer/telephone integration, network connectivity, Asynchronous Transfer Mode (ATM) and switched networks, enterprise applications and "practical internets."

But with explosive interest in the Internet coming from all industries, show sponsor SoftBank Expos is launching a companion event, Interop DotCom, to be held April 2-4. Interop DotCom will feature Internet business applications and services.

Asked what draws them to Networld/Interop, some managers pointed to technologies and products such as Microsoft Corp.'s Windows NT, Novell, Inc.'s NetWare and ATM. Their comments follow:

Ron Patterson
Systems analyst at Shell Canada in Calgary, Alberta

"My focus will be narrow," Patterson says. With Shell Canada moving to NT servers from its current NetWare platform, Patterson will be hunting for NT information at the seminars and on the show floor.

Shell is upgrading its Windows 3.1 environment, moving entirely to workstations that use Windows NT on the desktop. Patterson said he will look for NT systems management utilities and backup applications. "I'm not impressed with Microsoft's System Management Server for our environment," Patterson says. The product, he notes, isn't robust and doesn't handle failure well. He says he plans to have 500 of 4,000 network nodes up and running by year's end.

Darryl Garland
Senior telecommunications technician for the city of Tulsa, Okla.

Garland says he'll be soaking up as much information on ATM as he can. The city recently entered into a contract with its local cable TV provider that will enable it to string optical fiber for upgrading its network. Today, the city has 7 or 8 miles of fiber connecting a handful of municipal offices. That will increase over the next few years as all municipal buildings migrate to the fiber backbone.

CONFERENCE watch

Garland says he will also focus on technology changes in products such as bridges, routers and hubs at the show.

Dale Olson
Network administrator at Deere & Co. in Moline, Ill.

Olson says he will attend seminars on the Internet's Domain Name System (DNS) and client/server technology.

"We run DNS and [Sun Microsystems, Inc.'s Network Information Services] in our system, and it's pretty solid technology. But when you get into trouble, you don't find a lot of information on it," he says.

Olson says he's interested in packets and ports and what's going on in the network. "We're doing a three-tier client/server type of implementation," he says.

Olson says he also will look for hardware and systems and communications software. "We recently moved to [a Fiber Distributed Data Interface] backbone, and we're running fiber to the floors and 10M bit/sec. Ethernet on the floors," he says.

Another attraction for him will be systems software for the operations center, he says.

Mark Taselski
Design manager at JR Automation in Holland, Mich.

With his company in the process of setting up a World Wide Web server and electronic-mail system server, Taselski says he's hoping to get some good information out of the seminars "Linking the Unbounded Office" and "Keeping the Corporation Safe from Intruders."

"We also have plans to implement Lotus Notes so we can communicate on projects," he says. For that, Taselski says he'll go to a seminar called Notes Arrives. "I'm mainly interested in information because we've already made our product decisions," Taselski says. He says he hopes to learn enough to help him roll out JR's network plans.

Bill Trubey
Network engineer at Lockheed Martin Corp. in Denver

A longtime Networld attendee, Trubey says he plans to sit in on a workshop and two-day tutorial on ATM strategies and implementation. "We're looking at ATM to improve our WAN infrastructure as well as to help us reduce costs," he says.

Trubey also says he's hoping to learn more about network management, especially communications practices, procedures and tool sets; switched LAN technology; and bandwidth management systems. "Some of the most valuable information I get comes through sharing war stories with other network professionals in casual conversations," he says.

Donald Gathers
Network engineer at the University of Oregon in Eugene

What you don't know might hurt you. That's why Gathers and four others from the university will attend the show. "I want to see what we're not doing now," Gathers says. He will attend a seminar on TCP/IP administration to learn about integration of Unix systems and other desktop operating systems such as Windows and Mac OS. Gathers, who oversees a 7,000-node network, says Microsoft's Windows 95 and NT are coming on strong.

"We want to stay on top of technology to make sure that our department can do in the future what we can't do now," he says. Gathers says he will visit several vendor booths, in particular vendors of backup applications and Hewlett-Packard Co. "I'm interested in OpenMail because, while I love the Lotus CC:Mail interface, which we're currently running, I don't like the architecture," he says. ■

Haber is a freelance writer in Norwell, Mass.

PLACE

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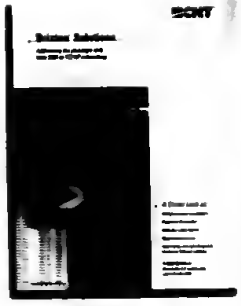

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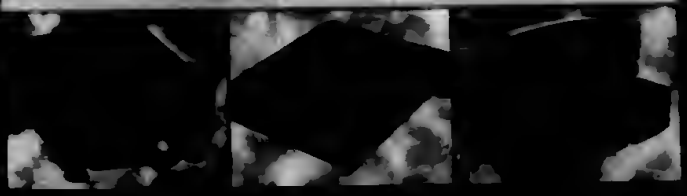

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Mutual fund maven shares high-technology insight

Nick Moore, a portfolio manager for the Franklin Templeton Group in San Mateo, Calif., helps run the firm's $65 million California Growth Fund and its $335 million Small Cap Growth Fund. The funds, which are about 30% invested in high-technology stocks, appreciated by at least 40% last year. Staff writer Stewart Deck asked Moore to explain how he picks technology stocks.

Q: 1995 was a great year for high-technology stocks. Can this continue?

A: 1995 was a once-in-a-decade year of optimism, when everything worked, but that is not sustainable. 1996 will be more like an average of the last six or seven years.

Q: What guidelines do you follow when selecting stocks?

A: We lean toward companies with a franchise in intellectual property, such as **Intel Corp. (NASDAQ:INTC)**, as opposed to companies like **Micron Technology, Inc. (NYSE:MU)** that sell commodities.

We want products sold by businesses to businesses rather than to consumers.

We look for companies with large market share. They should either own at least 50% of the market or be part of an oligopoly of three or four market leaders.

We watch gross margins. For networking stocks, you want margins higher than 50% (60% to 75% if the company is involved in routers). For disk drive manufacturers, gross margins around 20% are good. For PC manufacturers, gross margins in the 20% range are good. For business software, good gross margins are 70% to 80%.

We also look at product life cycles. The latest update of a company's most important product should increase profits. If it doesn't, then people have switched to something else.

We also watch price-to-earnings and price-to-sales ratios. The lower the price-to-earnings ratio, the more attractive it is. The exact ratios depend on the individual sectors.

Q: Should the reputation of a company's management, or new management, entice investors?

A: Don't buy a company because of management. Buy it for great products.

Q: Several software companies have had a rough time recently. Should investors stay away from software?

A: Not necessarily. Because of slow Windows 95 sales, every company involved in PC software missed its numbers recently, except **Microsoft Corp. (NASDAQ: MSFT)**.

In the software sector, **Adobe Systems, Inc. (NASDAQ: ADBE)** is a good company with positive cash flow, huge R&D and high margins. It just had too much Windows 95 product in the channel, so it didn't make its numbers and lost 50% of its stock value. It could go up 100% in the next 18 to 24 months.

Q: Are there other companies, similar to Adobe, that you think are particularly undervalued?

A: **Symantec Corp. (NASDAQ:SYMC)** and **Silicon Graphics, Inc. (NYSE:SGI)**. Silicon Graphics is a good franchise with great products and great science that had a bad quarter.

Q: Which sectors would you stay away from?

A: Although Internet stocks have dropped in price recently, they're still overpriced. Data warehousing stocks are terribly overvalued right now, as well.

Q: Which sectors do you like?

A: Networking. Networking speed hasn't kept pace with the ever-increasing speed of processing. It's hard to see this as anything but an open-ended opportunity, although maybe not for every vendor.

Q: When do you sell a rising stock?

A: Sell when the company reaches its full valuation, especially low-margin commodity businesses. If you bought the stock just because it was a bargain, you don't want to still have it when it rises back to average levels.

The only reason to buy those in the first place is if you can get them at a great price. The majority of technology companies aren't worth holding when they're fully valued.

Look at how fast they turn over their assets, where they are in their product life cycle and how fast the market is growing. Run the numbers. If it's a strong, high-quality franchise and it isn't showing any signs of strain, then give it a little extra room.

Moore's rules of thumb

- Buy the market leader if it is still growing at a good clip. The biggest mistake technology investors make is fooling around with $20 million companies. Go with the company that has grown from $300 million to $1 billion.
- Buy companies with an established user base.
- Jump in with both feet. Don't go into a stock to make 10%. Moore won't buy stock unless he thinks he can potentially make 40% in two years.
- Don't try to catch a temporarily hot company.

Nick's picks

Great franchises at reasonable values

- Hewlett-Packard Co. (NYSE:HWP)
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- Intel Corp. (NASDAQ:INTC)
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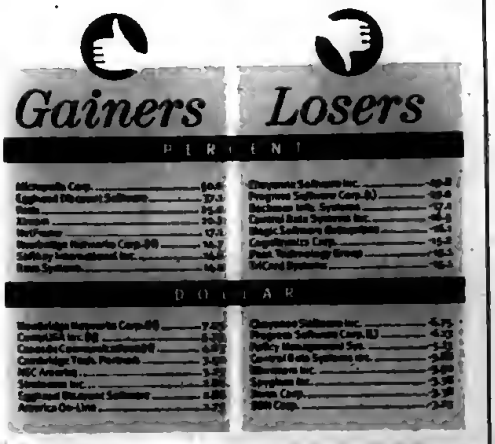

Industry Almanac

IE rides distribution shifts

The playing field has shifted in the PC distribution business, leading to some rocky times for distributor stocks.

"A trend to open sourcing represents a fundamental shift in how high-volume PCs are distributed," says David Grossman, a vice president at Montgomery Securities in San Francisco. Open sourcing means vendors no longer obligate resellers to buy from a particular distributor.

That development has hurt **Intelligent Electronics, Inc. (NASDAQ:INEL)** more than most distributors, Grossman says. "It was the only pure aggregator left in the marketplace that was moving PCs in volume."

In addition, Intelligent Electronics (IE) has struggled with consolidation in its customer base. It acquired one of its customers, The Future Now, Inc., to keep it out of competitors' hands, Grossman says.

But Annie Erner, an analyst at UBS Securities, Inc. in New York, advises investors that the stock is a good long-term buy. The combination of The Future Now and IE's other service business amounts to $100 million in annual revenue. That by itself is worth what IE's stock is trading for, she notes.

Although optimistic about the company's prospects, James Meyer, an analyst at Janney Montgomery Scott, Inc. in New York, has a hold on the stock.

"They are a reseller trying to become a service company," he says. "Now it comes down to execution."

— Stewart Deck and Tom Harbert

Shifting ground

Intelligent Electronics has been volatile as it tries to adjust to changes in the distribution business

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NYN	19.75	10.75	Nynex Corp	50.63	-0.63	-1.2
OCTL	88.00	18.00	Octel Communications Corp. (H)	40.00	0.75	1.6
ODSI	43.25	16.00	Optical Data Systems Inc.	21.00	-2.25	-9.7
PCTL	64.72	37.00	Picturetel Corp	32.15	-2.63	-7.6
PTON	50.75	6.75	Proteon Inc.	5.13	-0.38	-6.8
RACO	7.88	6.25	Racotek Inc.	6.88	-0.50	-9.3
RETX	3.50	1.81	Retix	3.00	1.00	25.0
SFA	24.88	11.88	Scientific Atlanta Inc.	17.63	-1.15	-6.0
SHVA	96.25	28.25	Shiva Corp	97.75	-1.25	-1.3
SBC	60.25	41.63	Southwestern Bell Corp.	57.75	-0.83	-1.2
FON	46.50	30.75	Sprint Corp.	38.50	1.00	2.7
SMSC	23.50	12.50	Standard Microsystems Corp	13.00	-0.25	-1.6
STRM	44.50	16.00	Stratacom Inc.	10.00	2.00	6.5
TBIT	9.63	2.38	Telebit Corp.	5.15	0.44	9.3
USRX	130.75	30.00	US Robotics	130.00	0.50	0.4
USW	48.38	28.50	U S West Inc.	32.75	0.00	0.0
XIRC	15.50	5.00	Xircom	13.38	2.25	20.2
XYLN	50.50	31.75	Xylan Corp. (L)	31.75	-5.75	-3.5
AALR	9.65	4.75	Advanced Logic Research	6.63	-0.38	-3.4
AAPL	50.13	23.00	Apple Computer Inc. (L)	24.15	-0.88	-3.3
ASTA	19.15	4.63	AST Research Inc. (L)	4.75	0.00	0.0
CPQ	56.75	31.11	Compaq Computer Corp.	38.63	0.25	2.0
DELL	48.50	25.75	Dell Computer Corp.	34.63	1.88	5.7
GATE	57.88	16.00	Gateway 2000 Inc.	27.88	1.38	5.2
HWP	104.15	59.13	Hewlett Packard Co.	96.38	1.13	1.2
MLXI	38.88	9.38	Micron International Inc.	9.88	-0.75	-7.1
NRNY	75.13	49.88	NEC America	57.88	3.25	5.9
RGI	43.63	21.13	Silicon Graphics	25.00	0.25	1.0
SUNW	37.13	18.75	Sun Microsystems Inc.	64.50	-0.63	-1.6
ABDI	13.63	6.75	Amdahl Corp	8.31	0.44	5.0
CYR	29.75	17.63	Cray Research Inc.	29.00	9.38	1.8
DGN	19.15	6.75	Data General Corp.	14.88	-0.13	-0.8
DEC	76.50	34.38	Digital Equipment Corp.	55.13	1.00	1.8
IBM	120.00	81.38	IBM	113.38	-2.25	-1.9
MDCD	13.00	5.00	Meridian Data Inc.	10.25	0.00	0.0
NETF	7.38	4.25	NetFrame	5.13	0.75	17.1
SQNT	25.38	10.15	Sequent Computer Sys.	13.75	-0.25	-2.1
SEQS	10.00	5.44	Sequoia Systems Inc. (L)	5.50	-0.25	-4.7
SRA	36.13	25.00	Stratus Computer Inc.	27.00	0.13	0.5
TDM	17.00	8.25	Tandem Computers Inc.	8.00	-0.25	-2.7
TRCD	5.75	2.00	TriCord Systems	3.00	-0.00	-15.1
UIS	13.63	5.50	Unisys Corp	8.00	0.00	9.0
ADBE	74.25	30.00	Adobe Systems Inc.	12.13	0.75	2.6
AMSWA	8.75	3.50	American Software Inc.	3.25	-0.15	-3.2
APLX	41.75	8.75	Applix Inc.	35.25	-0.50	-1.4
ARSW	48.50	28.75	Arbor Software	46.00	0.50	1.1
ACAD	53.00	27.25	Autodesk Inc.	38.50	2.50	6.9
BACH	11.88	4.13	Bachman Info. Systems	8.50	-1.25	-17.1
BGSS	62.00	27.75	BGS Systems Inc.	35.25	-0.75	-0.7
BMCS	81.38	27.63	BMC Software Inc.	54.81	-1.19	-2.1
BOOL	50.38	18.25	Books and Barrage	25.75	1.00	4.0
BORL	21.25	7.75	Borland Int'l. Inc.	17.75	0.00	0.0
BOBY	93.75	28.75	Business Objects (H)	85.00	-2.25	-2.6
CESN	1.94	1.38	CE Software	2.50	-0.25	-9.1
CVE	27.88	12.88	Cheyenne Software Inc.	15.88	-6.75	-29.8
COGNF	69.25	50.88	Cognos Inc.	57.75	1.25	2.2
CA	76.50	37.00	Computer Associates	72.63	2.63	3.8
CVN	15.50	4.75	Computervision Corp.	10.13	0.63	6.6
CPWR	37.75	15.00	Compuware Corp	23.38	-1.38	-3.6
CSRE	27.25	9.88	Consware Inc.	21.75	-1.75	-7.4
COSFF	10.50	8.50	Corel Corp.	9.88	-0.50	3.7
DWTI	16.00	5.75	Dataware Technologies Inc.	6.25	0.00	0.0
DSLGF	32.75	9.75	Discreet Logic Inc.	15.50	-1.75	-8.5
FILE	67.00	50.25	Filenet Corp.	58.00	-1.88	-3.1
DDDDF	8.25	3.38	4th Dimension	3.50	-0.38	-6.4
FTPS	40.63	10.38	FTP Software Inc.	12.31	-0.00	-0.3
GSOF	26.00	7.50	Group 1 Software	8.00	-1.00	-11.1
GPTA	11.50	6.88	Gupta	5.56	-0.31	-5.5
HYSW	38.38	14.00	Hyperion Software Corp	21.63	-0.88	-3.9
IRIC	18.63	50.00	Information Resources	14.38	0.00	0.0
IFMX	36.75	50.63	Informix Corp	27.88	-3.11	-10.4
INGR	20.13	10.00	Intergraph Corp	16.13	-1.65	-9.2
LEAF	12.63	8.75	Interleaf Inc.	8.81	-0.44	-4.7
ISLI	26.25	8.75	Intersolv Inc.	11.63	0.50	4.5
INTU	89.25	30.63	Intuit Inc.	45.88	-3.11	-6.4
LGWX	19.00	10.00	Logic Works	16.25	0.15	0.9
MGIC	11.75	3.63	Magic Software Enterprises	9.13	-3.75	-38.3
MANU	20.50	9.50	Manugistics Group Inc.	13.50	0.13	1.0
MAPG	40.00	10.00	Mapinfo Corp.	11.75	-0.25	-2.1
MATH	7.88	2.75	MathSoft	4.00	-0.38	-5.9
MCAF	65.25	17.88	McAfee Associates	56.50	-1.25	-2.2
MENT	22.88	10.88	Mentor Graphics	14.63	-0.13	-0.8
MFGY	12.00	8.75	Micro Focus	10.88	0.88	9.2
MGRI	15.13	3.75	Micrografx Inc	12.06	-0.81	-5.9
MSFT	109.25	68.75	Microsoft Corp.	103.50	2.50	2.5
ORCL	55.00	16.00	Oracle Corp.	42.75	-0.63	-1.3
PMTC	59.88	37.88	Parametric Technology	50.00	2.50	5.0
PARQ	56.10	4.63	ParcPlace Systems Inc.	8.75	0.38	4.5
PSFT	59.75	19.63	Peoplesoft	57.75	1.75	3.2
PTEC	16.13	4.75	Phoenix Technologies	10.00	1.13	8.7
PSQL	16.88	3.13	Platinum Software	7.15	0.00	0.0
PLAT	50.00	13.25	Platinum Technology	15.13	-0.65	-4.0
PRGS	38.00	14.75	Progress Software Corp. (L)	15.00	-4.12	-20.0
RNBO	26.75	15.11	Rainbow Technologies Inc.	17.75	-0.63	-3.4
ROSS	7.25	2.19	Ross Systems	3.50	0.44	14.0
SCOC	15.00	5.30	SCO Inc.	8.38	-0.13	1.9
SDTI	67.50	10.00	Security Dynamics Tech	51.25	0.25	0.5
SKEY	31.25	13.38	Software International Inc.	20.63	2.63	14.6
SPCO	5.13	2.19	Software Publishing Corp	2.88	-0.19	-6.1
SQAX	27.75	16.00	SQA Inc.	27.75	-0.15	-0.5
SOTA	10.00	4.63	State of the Art	12.00	-0.63	-5.0
SSW	72.63	32.88	Sterling Software Inc.	73.25	1.75	2.5
SDRC	35.50	0.38	Structural Dynamics Research	33.00	-0.69	-2.0
SYBS	62.75	19.88	Sybase Inc.	22.75	-2.13	-8.5
SYMC	35.25	9.88	Symantec Corp.	12.75	-0.63	-4.7
SNPS	38.50	23.00	SynOpsys	32.00	2.00	6.7
SSAX	30.63	12.63	System Software Assoc.	24.75	0.38	11.2
SYSF	18.15	7.75	Systemsoft Corp.	16.13	-0.75	-4.5
TRUV	10.13	3.88	Truevision Corp	7.75	-0.06	-0.9
VIEW	15.13	6.38	ViewLogic Systems	11.00	0.25	2.3
VMRK	21.50	5.75	VMark Software Inc.	7.19	0.06	0.8
WALK	11.15	4.63	Walker Interactive Systems	10.00	-0.19	-1.9
WALL	51.25	13.00	Wall Data Inc.	13.75	0.44	2.9
WANG	25.50	13.25	Wang Laboratories Inc.	21.65	-1.38	-5.5
AMER	60.00	16.75	America On Line	56.63	2.75	5.1
NETC	91.50	19.00	Netcom On Line	26.13	-1.13	-4.5
NSCP	87.00	22.00	Netscape Comm. Corp	42.88	-0.75	-1.6
PSIX	29.00	8.75	PSINet	9.75	-0.38	3.7
QDEX	39.50	3.50	Quarterdeck Corp	14.50	-0.13	-0.9
SPYG	61.00	13.25	Spyglass Inc.	21.63	1.38	13.5
UUNT	58.75	25.75	UUNET Tech.	25.60	-0.75	-2.9
AMD	39.75	16.11	Advanced Micro Devices	17.50	0.50	2.9
ADI	38.13	16.63	Analog Devices Inc	27.25	0.00	0.0
CHPS	15.88	7.15	Chips and Technologies	8.88	-0.38	-4.1
CRUS	61.13	16.75	Cirrus Logic	39.00	0.00	0.0
CY	27.25	10.00	Cypress Semiconductor Corp.	11.88	-0.63	-5.0
CYRIX	49.75	18.25	Cyrix	24.50	1.25	5.4
INTC	78.38	43.50	Intel Corp	57.00	0.75	1.3
LSI	62.50	27.50	LSI Logic Corp	26.75	-0.63	-2.3
LSCC	43.00	23.00	Lattice Semiconductor	28.25	-1.15	-3.8
MCRL	32.50	12.19	Micrel Semiconductor Inc.	15.00	-1.50	-9.1
MU	94.25	27.50	Micron Technology	31.88	-0.13	-0.4
MOT	82.50	44.75	Motorola Inc.	53.13	-1.25	-2.3
NSM	53.63	16.00	National Semiconductor	14.00	-0.88	-5.9
SERA	28.75	9.25	Sierra Semiconductor	19.88	1.25	6.3
TXN	83.75	42.75	Texas Instruments	51.75	0.63	1.2
VLSI	39.13	10.75	VLSI Technology	13.63	0.00	0.0
WWTE	6.00	1.25	Wyser	1.61	0.00	0.0
WDC	22.25	13.38	Western Digital Corp	19.75	1.13	6.3
XLNX	55.50	30.75	Xilinx	32.50	-1.88	-5.5
ZLG	54.13	20.50	Zilog Inc.	33.00	1.00	3.0
APCC	25.88	7.88	American Power Conversion	10.13	0.13	1.3
ADPT	56.38	29.75	Adaptec Inc.	49.50	-0.88	-1.7
CBEX	13.15	4.25	Cambex Corp	6.13	0.00	0.0
CGN	7.25	2.50	Conningbroco Corp.	4.19	-0.75	-15.2
CREAF	14.13	1.88	Creative Technologies Inc.	8.19	-0.63	-9.2
RACE	13.13	3.61	Data Race Inc.	4.31	-0.44	-9.2
DTM	9.50	4.13	Dataram Corp.	4.25	-0.13	-2.9
EMC	27.50	13.00	EMC Corp.	25.00	1.25	6.1
EMLX	28.50	6.50	Emulex Corp	14.38	1.25	9.5
ESCC	25.25	13.00	Evans and Sutherland	21.00	1.25	5.7
EXBT	18.00	10.00	Exabyte	18.13	1.13	7.5
ISLF	4.25	1.50	Intelligent Info. Systems	2.00	0.00	0.0
IOMG	26.38	2.25	Iomega Corp	20.88	2.38	10.5
IPLSA	7.88	2.50	IPL Systems Inc.	3.50	-0.19	-3.7
KMAG	57.50	14.75	Komag Inc.	25.00	-0.50	-2.0
MLIS	7.50	1.25	Microplexus Corp	3.00	1.13	50.0
MTSI	37.75	11.25	Micro Touch Systems Inc.	15.25	0.50	3.4
PEAK	34.25	14.75	Peak Technology Group	18.25	3.25	15.1
PNCL	19.75	1.88	Pinnacle Micro Inc	7.94	-0.06	-0.8
PTNX	38.75	13.50	Printronix Inc.	28.63	-0.38	-2.0
AQM	6.38	3.25	QMS Inc.	6.88	-0.38	7.1
QNTM	38.50	50.00	Quantum Corp	17.88	-1.00	-5.3
RDUS	14.13	0.94	Radius Inc.	2.00	-0.25	10.8
SEG	67.25	26.75	Seagate Technology	51.75	1.38	2.6
STE	31.75	17.88	Storage Technology	25.88	-0.50	-1.9
TEX	61.88	30.75	Textronix Inc.	33.50	-1.50	-4.3
XRX	144.63	109.38	Xerox Corp.	127.13	-3.38	-2.6
AMSY	26.63	11.38	American Mgmt Systems (H)	23.25	-0.88	3.1
ANLY	37.75	22.25	Analysts Int'l.	30.00	1.50	-4.2
AUD	41.50	30.25	Auto Data Processing	38.88	0.50	0.9
CATP	61.00	27.25	Cambridge Tech. Partners	50.50	3.19	6.6
CEN	47.50	31.63	Cendant Corp	43.13	0.00	0.0
CDO	23.75	17.75	Condisco Inc.	22.00	1.50	7.5
CHRZ	37.88	7.50	Computer Horizons (H)	37.88	0.75	2.0
CSC	80.75	46.19	Computer Sciences	70.63	-0.25	-0.4
TSK	32.00	10.50	Computer Task Group	59.00	-3.13	-5.6
CPU	55.63	17.50	CompUSA Inc (H)	35.65	3.25	11.5
CDA1	26.11	6.63	Control Data Systems Inc	19.63	3.06	16.5
EGGS	14.75	3.00	Egghead Discount Software	10.63	2.88	37.1
GME	58.00	38.38	General Motors E (EDS)	57.38	1.00	3.6
IMAC	38.50	8.13	Imacon Corp	30.94	-0.44	-2.5
INEL	14.63	3.50	Intelligent Electronics	5.50	0.00	0.0
KEA	30.00	18.25	Keane Inc.	29.83	0.00	3.0
MSEL	8.38	2.25	Meridel	2.38	-0.38	-13.8
MICA	15.00	7.75	Micrograf Inc.	10.50	0.00	0.0
PAYX	62.50	28.75	Paychex	58.75	3.25	3.1
PMS	54.25	42.63	Policy Management Sys.	44.75	-5.25	-10.2
REY	41.00	25.88	Reynolds and Reynolds	40.00	1.25	3.3
SBIC	24.50	17.75	SEI Corp	27.63	0.88	3.7
SMED	62.88	33.00	Shared Medical Systems	61.25	0.00	0.0
SSPE	38.50	10.88	Software Spectrum Inc.	30.25	-0.25	-1.2
SNDT	16.00	21.63	Sundard Data Systems (H)	34.75	-2.75	-6.3

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Our Web address is www.computerworld.com. All of our staff members can be reached via E-mail on the Internet using the form firstname_lastname@cw.com. IDG News Service correspondents can be reached using the form firstname_lastname@idg.com. Subscription inquiries go to circulation@cw.com.

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Olympic telecommuting

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telecommuting experiment in U.S. history.

"The hope is that the Olympics will be a catalyst for [development of] long-term telecommuting policies," said Michael Dziak, a telecommuting consultant and cofounder of the Metro Atlanta Telecommuting Advisory Council. "We can be a laboratory for teleworking."

But while Dziak's telecommuting workshops are packed, he said he is stunned by the number of companies that aren't planning to change work habits at all. His stated goal was to get 20,000 workers at 200 out of 1,300 companies to institute comprehensive telecommuting policies by January of this year. But so far only about 24 companies have done so, he said.

Sonny Williams

The Metro Atlanta Telecommuting Advisory Council's Michael Dziak *says his 'hope is that the Olympics will be a catalyst for [development of] long-term telecommuting policies'*

This is due partly to resistance from upper managers, who fear a loss of control and productivity when employees work at home, Dziak said.

But telecommuting advocates say the opposite is true: Real productivity increases come when workers are able to work in uninterrupted home offices during times they are most efficient, rather than during rigid 9-to-5 workdays. Home workers also don't need decompression time after lengthy commutes, so their morale rises, which also aids productivity.

Speeding out the costs

Telecommuting costs can be minimal if workers use their own equipment. For employers that buy equipment such as laptops, modems and software and pay to put in phone lines, it can cost between $500 and $3,000 per telecommuter, Dziak said.

Companies that convert to the virtual office concept of telecommuting — where workers spend more time at home or on the road than in the office — can save $3,000 to $6,000 per worker in overhead office space, Dziak said.

Companies such as Georgia Power are telecommuting enthusiasts. Frank Boyd, the utility's telecommuting adviser, said a 2-year-old project involving 75 workers was so successful that more workers and managers are clamoring to participate.

In the Georgia pilot, about 15 development workers were sent home with all the office equipment and software needed to access the office network. Other workers were sent to satellite offices that used high-speed T1 or Integrated Services Digital Network phone lines, saving commuting time.

In the first year, telecommuting saved Georgia Power $100,000 in overhead because the firm was able to close some offices.

For the Olympics, many of the 1,000 employees who work downtown will telecommute or work flexible shifts, Boyd said.

For those companies with a mobile workforce, dealing with the Olympic gridlock will be less of a challenge. For instance, some lawyers at the Paul, Hastings, Janofsky and Walker firm already spend a lot of time on the road.

To accommodate telecommuters, more laptops will be shipped from the firm's offices around the country, information systems director Michael Stanko said. The law firm uses Symantec Corp.'s PCAnywhere to dial in to its network; document management software on the server gives attorneys access to a research database.

Remote access is through a "chatterbox" device with supporting software, modems and discrete PCs.

Working remotely

Forward-thinking Atlanta companies who are eyeing telecommuting as a way to avoid the Olympic crush this July have a variety of options at their disposal.

Some companies will send workers home for the bulk of the Games, which will last two weeks. Others may operate remote work offices closer to suburban homes.

Bound for gridlock

But the Georgia Institute of Technology has a unique problem. The Olympic Village for housing athletes was built on campus, so the university's information technology staff will have to lend technical support to the village. Some workers, particularly IS staff, will have to get to the university despite the gridlock.

But for those not needed on campus, "we will encourage a significant amount of employees [in all departments] to work from home," said Gordon Wishon, vice president of information technology at Georgia Tech.

The university has undergone a "several-million dollar" upgrade to its campus network, which was partly funded by the sponsors of the Olympic Games, Wishon said.

— Mindy Blodgett

Boston Beer

CONTINUED FROM PAGE 1

new hardware at its Boston headquarters.

"It's really not as difficult as it seems," said Timothy E. Ostrom, manager of the microbrewery's three-person IS department.

"But I think a lot of executives make it sound that way because they want to be greeted as this great ball of fire for installing SAP," Ostrom said.

The shorter route

Maybe so, but Boston Beer took some very unconventional shortcuts to meet its self-imposed deadline of Jan. 1.

First, rather than assemble and train a big committee to hammer out how it should configure the software, the company turned the work over to three consultants from SAP.

"There's currently a shortage of SAP expertise. Big companies train their people then lose them," explained Martin Roper, the brewery's vice president of manufacturing and business development.

"I'm not interested in training future SAP consultants. As a small company, I can't afford that," Roper said. This year, Boston Beer's total IS budget is approximately $1.3 million.

Boston Beer also couldn't afford any delays, so Roper streamlined configuration decisions, which other R/3 sites have been known to agonize over for weeks or months.

When the SAP consultants asked for a configuration preference, Boston Beer made the decision in less than a day. SAP's R/3 has thousands of tables that must be configured, or customized, for the business.

The software suite runs a variety of applications, from order processing to accounting and production. It replaces several manual and legacy systems to give the brewery a clearer picture of its beer inventory and profits.

Also unusual was the company's use of an earlier version of R/3 software — Release 2.2E — instead of the current Release 3.0.

Lisa A. Rathbone

Boston Beer's Martin Roper *says, 'There's currently a shortage of SAP expertise. Big companies train their people, then lose them.' That's something he can't afford, he adds.*

That was to minimize chances of any extra complications. Already, Boston Beer was adding two brewing locations and was in the throes of its initial public stock offering.

On the technology side, the company shifted its 200 employees off of dumb terminals and Macintoshes and onto networked PCs that run Windows 3.1. The R/3 software runs on a Hewlett-Packard Co. Unix machine with an Oracle Corp. database.

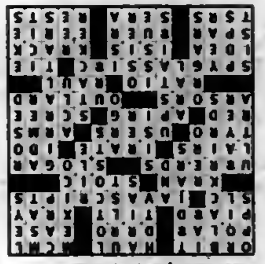
"With everything else going on, we were trying not to disrupt the existing business systems," Roper said.

So Boston Beer decided to forgo the usual business process re-engineering project. "The philosophy was to get up and running, then figure out how jobs would change," he said. "I think re-engineering delays the process, and I'm real happy we didn't go that route."

Delaying re-engineering "isn't a bad strategy," said Vinnie Mirchandani, an analyst at Gartner Group, Inc. in Stamford, Conn.

"But Boston Beer may be very optimistic in thinking they'll go back and do it. Chances are they won't because after the euphoria of implementation dies down, [the focus shifts] to maintenance," he said.

Solution to this week's crossword puzzle



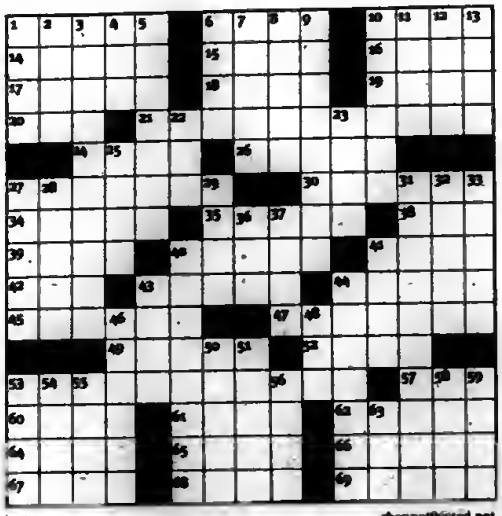
Java scripts detailed Bill Gates' look on the desktop, no matter what Microsoft's technology supplier Spyglass, Inc. or its future products — be they Blackberts or Gitmbers — can do. The bigger they are, the harder they fall, eh, IBM?

The Back Page

Web players and late products

Computerworld crossword by Rick Bennett

Who are the players in the war for Web supremacy, and what are the code names for "too-little/too-late" Microsoft products?



No. 4 Solution on previous page. rbennett@tcd.net

ACROSS

1 Comsat milieu
6 Transport
10 Decade of Digital's founding
14 Coordinate or bear
15 Bond nemesis
16 Typical software vendor promise
17 Electric –; MIDI instrument
18 Pinball no-no
19 Band of the light spectrum
20 Airport servicing Novell; abbr.
21 They blasted Gates' monopoly
24 Genghis' family
26 Zeno adherent
27 Straightens
30 "The network is the computer;" e.g.
34 Habitations
35 Extremely angry
38 Simplified Esperanto
39 Novice
40 Web browser targets
41 Patriots, for short
42 One to be baited?
43 Caricaturing
44 A sloping mass of rocks
45 Burnings
47 Sean Connery sci-fi vehicle
49 The relative magnitudes of two quantities
52 Late actor Julia
53 Microsoft Web partner
57 A social or business relationship
60 The content of cognition
61 Egyptian goddess
62 Particular talent
64 A unit of length based on the width of the hand
65 Sad one
66 Suggestive of the supernatural
67 Resident DOS progs.
68 Body fluids
69 Respites

DOWN

1 Old Oracle Corp. internal sales SW acronym
2 Churn
3 Code names for unannounced Microsoft Web products
4 007's creator
5 People who've been invaded by hackers?
6 New frontier in consumer electronics; abbr.
7 Pieces of an opera
8 Nasdaq penalty for cooking books
9 Land values
10 Central American nation
11 Lean-fleshed fish often farmed
12 Med schl. tst.
13 Late space author and fam.
22 Logical operator
23 Make angry
25 Sandwich
27 Superlative prefix
28 Pessimist
29 Pedro's yes yes
31 Code names for unannounced Microsoft Web products
32 Professional class not allowed on Frank Herbert's space ship
33 Looked into, with about
36 Give program object a new name, for short
37 Jason's ship
40 In the head
41 Liberal rights org.
43 Type of retentiveness
44 Did Microsoft rip off their compression technology?
46 Internal & pipe
48 A large vessel for making coffee or tea
50 This *Computerworld*, e.g.
51 Willows having pliable twigs used in basketry and furniture
53 Fam. memb.
54 Early DEC systs.
55 A period of time
56 El prefix; semitic home
58 Def succeeder; Clinton nemesis
59 Supplements with difficulty
63 Born

For questions or comments, contact the author at rbennetg@tcd.net.

Inside Lines

The envelope, please!

If you couldn't stay up to watch the Oscars, Sun Microsystems Chairman Scott McNealy shared his own fake Oscar picks during a keynote at last week's Internet & Electronic Commerce Expo in New York. The winners — er, targets — were the following:

Best Supporting Role — "HP Does Bill Gates' Windows."

Best Short Subject — "IBM's Complete Guide to the Internet."

Best New Fiction Sequel — "DEC's Back, No. 14."

Was this a hint, Scott?

On the plane to New York, Scott must have read the Feb. 25 issue of *Newsweek* — the one that featured a lineup of the top "Corporate Killers," the downsizing CEOs from AT&T, Digital and IBM. During his keynote, McNealy segued into a non sequitur rant about how corporate downsizing is the American way. "One of the great myths is that there shouldn't be any losers in America," McNealy said. He urged disbelievers to "take a bus trip to countries where they don't have any layoffs or downsizings and compare." His comments drew only a smattering of applause. "At least I got three of you on my side," he joshed, regaining form.

More pink shirts at DEC?

Whispers of impending layoffs are once again circulating around Digital. Sources say the company is mulling a fresh round of layoffs over the next few quarters that won't be quite as drastic as the ones that rocked it in 1994 and 1995. Digital's profitable Multivendor Computers Services Division, largely untouched by previous cuts, could take the brunt this time around because of declining service revenue, the sources said. A company spokeswoman last week denied any specific new workforce cuts, but said DEC is still working its way through previously announced layoffs.

C'mon, relax!

Some people seem to be taking concerns over Internet security a bit far. A *Computerworld* reader recently visited the home page for TGV Software in Santa Cruz, Calif. When he attempted to download an evaluation copy of software, he was told to send an E-mail containing his name, company, telephone number, title and all sorts of other information. After doing so, he was called by a sales representative who quizzed him on exactly what he planned to do with the software. The rep offered a code to download the software — but when the code reached 27 characters, our weary reader gave up. He has nominated TGV, which was recently bought by Cisco, for "Paranoid of the Week." A TGV spokesman declined comment but said he would look into the matter.

The 5th Wave by Rich Tennant

Netscape sneaks around

Netscape last week quietly previewed its forthcoming Navigator 3.0 browser. The product, code-named Atlas, includes virtual reality support and more sophisticated Java capabilities. But not all the features expected in Version 3.0 are there yet. Missing is a kit that lets IS managers customize buttons and menus on Navigator. But those functions are expected to be included by Atlas' June ship date. Curious Web users can get the prerelease browser at ftp://ftp.netscape.com/pub/navigator/atlas/pr1/windows/standard/atls32s1.exe.

Vendors will do anything to draw trade show attention. Attendees at Networld/Interop this week can watch live neurosurgery and, every half hour, chat with surgeons at the AT&T booth. They don't have to scrub for this privilege — an ATM backbone links the Las Vegas venue to the Allegheny Health, Education and Resource Foundation in Pittsburgh. Computerworld *wants to pick your brain, too, but you don't need anesthesia and ATM. Just call (800) 343-6474 and ask for news editor and amateur neurosurgeon Patricia Keefe, or reach her directly at (508) 820-8183 or tish_keefe@cw.com.*

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Automatic network connection from the road or office (IP Switching)	YES	NO	NO
High-speed connectivity to anyone, anywhere (ISDN, X.25, CDPD)	YES	Partial	NO
Dynamic network connectivity with automatic router discovery and router fallback	YES	NO	NO
Advanced network troubleshooting tools keep you connected	YES	Partial	YES
Automatic scripting allows easy, one-click access to your most frequent connections	YES	NO	NO
Protects valuable data with Internet firewall support for your PC (SSL, SOCKS, AKS, others)	YES	NO	NO
Increases desktop flexibility by allowing you to run Netware applications over IP	YES	NO	YES
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